EDUCATION HIGHER DEGREE RESEARCH STUDENTS WRITING FOR PUBLICATION

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Abstract

Higher Degree Research (HDR) student publications are increasingly valued by students, by professional communities and by research institutions. Peer-reviewed publications form the HDR student writer's publication track record and increase competitiveness in employment and research funding opportunities. These publications also make the results of HDR student research available to the community in accessible formats. HDR student publications are also valued by universities because they provide evidence of institutional research activity within a field and attract a return on research performance. However, although publications are important to multiple stakeholders, many Education HDR students do not publish the results of their research. Hence, an investigation of Education HDR graduates who submitted work for publication during their candidacy was undertaken.

This multiple, explanatory case study investigated six recent Education HDR graduates who had submitted work to peer-reviewed outlets during their candidacy. The conceptual framework supported an analysis of the development of Education HDR student writing using Alexander's (2003, 2004) Model of Domain Learning which focuses on expertise, and Lave and Wenger's (1991) situated learning within a community of practice. Within this framework, the study investigated how these graduates were able to submit or publish their research despite their relative lack of writing expertise.

Case data were gathered through interviews and from graduate publication records. Contextual data were collected through graduate interviews, from Faculty and university documents, and through interviews with two Education HDR supervisors. Directed content analysis was applied to all data to ascertain the support

available in the research training environment. Thematic analysis of graduate and supervisor interviews was then undertaken to reveal further information on training opportunities accessed by the HDR graduates. Pattern matching of all interview transcripts provided information on how the HDR graduates developed writing expertise. Finally, explanation building was used to determine causal links between the training accessed by the graduates and their writing expertise.

The results demonstrated that Education HDR graduates developed publications and some level of expertise simultaneously within communities of practice. Students were largely supported by supervisors who played a critical role. They facilitated communities of practice and largely mediated HDR engagement in other training opportunities. However, supervisor support alone did not ensure that the HDR graduates developed writing expertise. Graduates who appeared to develop the most expertise, and produce a number of publications reported experiencing both a sustained period of engagement within one community of practice, and participation in multiple communities of practice.

The implications for the MDL theory, as applied to academic writing, suggests that communities of practice can assist learners to progress from initial contact with a new domain of interest through to competence. The implications for research training include the suggestion that supervisors as potentially crucial supporters of HDR student writing for publication should themselves be active publishers. Also, Faculty or university sponsorship of communities of practice focussed on HDR student writing for publication could provide effective support for the development of HDR student writing expertise and potentially increase the number of their peer-reviewed publications.

Keywords

Higher degree research students, communities of practice, expertise, legitimate peripheral participation, model of domain learning, novice writers, scholarly publication, writing for publication

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List of Abbreviations

ARC	Australian Research Council
ERA	Excellence in Research for Australia
HERDC	Higher Education Research Data Collection
HDR	Higher Degree Research
MDL	Model of Domain Learning
ZPD	Zone of Proximal Development

Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature: QUT Verified Signature

Date: 10 October, 2012

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Chapter 1: Introduction

1.1 PREAMBLE

Publication of scholarly works such as peer-reviewed articles, conference papers and book chapters during candidature of a Higher Research Degree[1] is increasingly important within the field of Education. Arguably, publication has always been valued as a contribution to research and professional communities. Publication is also important in annual research reporting where publications are counted, publically recorded, and used to determine research funding allocations. Such exercises have been implemented in various guises in Australia since the Higher Education Support Act of 2003 (Meek, 2006). Additionally, Higher Degree Research (HDR) graduates now find themselves in an environment where publications are important for the competitiveness of their research track record for scholarships, fellowships, and research-orientated academic positions. The value of publication therefore relates to (1) the dissemination of knowledge within a field, (2) professional track record, and (3) institutional performance.

I am a Project Officer for the Faculty of Education research office of an Australian metropolitan university. In this capacity, I have observed that some of our HDR students publish during their candidature while other HDR students do not publish at all. Given the importance of publication, there is a need to understand how to support HDR students to publish. This knowledge will be informative because

[1] Doctor of Philosophy, Masters by Research, Professional Doctorate

within the field of Education the number of HDR student publications is low (Kamler, 2008; Lee & Kamler, 2008; Mullen, 2001).

The Education Faculty Research office supports HDR students who wish to write for publication through the provision of skill based workshops, an annual 'Publication Week' of writing activities, and facilitated writing groups. Many students also receive assistance from supervisors, special interest writing groups, and, further afield. Hence, to further support publication, we need an understanding of the effectiveness of the various types of support for publication accessed by Education HDR students inclusive of all training contributions.

1.2 OVERVIEW OF THE CHAPTER

There are three further parts to this chapter. The first part discusses the importance of publications to the community, to the student, and to the university (Section 1.3). The second part introduces the research investigation (Section 1.4) and outlines the significance and innovation of this study (Section 1.5). The final part presents an overview of the document (Section 1.6) and a chapter summary (Section 1.7).

1.3 BENEFITS OF SCHOLARLY PUBLICATIONS FOR STAKEHOLDERS

This Section describes the benefits of publication to communities (Section 1.3.1), to HDR students (Section 1.3.2), and to research institutions (Section 1.3.3).

1.3.1 Scholarly Publications Benefit the Community

Peer-reviewed HDR student publications benefit the community by providing access to research results in various scholarly formats. Journal articles, conference papers and book chapters are particularly important as they are more accessible to readers than theses. Although theses are increasingly available online, they are typically highly detailed, lengthy and possibly technically inaccessible to many readers. In

contrast, the various scholarly publications suit the information needs and discursive expectations of varied and specific audiences. These audiences include professional and research communities and policy makers. Therefore, HDR student publications can potentially impact on practice, policy, and further research.

In addition to presenting information in an accessible form, research published as a conference paper or article is also able to inform the community more quickly than would a thesis. It typically takes three to seven years to present results in a PhD thesis (Robins & Kanowski, 2008). In the field of Education, where a significant number of students study part-time, the completion time for PhD and Masters theses may be considerably extended (Pearson, Cumming, Evans, Macauley, & Ryland, 2008, 2011). In comparison to the time taken to complete a thesis, refereed conference papers may be available in proceedings within months of the presentation. The length of time between submission and publication varies between journals, however, strategic consideration of factors when submitting, such as number of issues per year, and 'online first' publication helps to minimise publication delays. Many researchers, including the students at my institution, also choose to make conference papers and pre-press versions of journal articles immediately available to a broad audience by storing them on electronic institutional repositories. These scholarly works are then accessible by Google search and are generally free to download. Published student research can therefore be made available for the benefit of the community before the thesis itself might be complete, or shortly after.

1.3.2 Scholarly Publications Benefit the Candidate

Publication of scholarly works during candidacy benefits HDR students in four ways. First**,** a scholarly identity develops as students write for publication and participate in

the important conversations in their field (Kamler & Thomson, 2006; Mullen, 2001). Kamler and Thompson (2006) explain this as a text work/identity work nexus that operates when students act as scholars by producing writing, submitting it for review and responding to feedback. This nexus allows students to produce written work and develop scholarly identities. A Doctoral student supported this concept when she described the practices of publication, including article development and responding to review and criticism, as being a professional work practice and as academic development (Robins & Kanowski, 2008). Therefore, a HDR candidate may gain a personal sense of herself[2] as a scholar by engaging in the processes of writing for publication.

Second, membership of the candidate's academic and discourse communities is also provided by publication. Contributing to academic conversations through publishing gives the student an entry point into relevant discourse communities (Cheung, 2010; Cho, 2004). HDR student publications create a professional research profile. Published work can generate interest in an individual's research and may be translated into invitations to contribute to future publication activities. For example, Robins and Kanowski (2008) report how Robins, a PhD student at the time, was invited to contribute a peer-reviewed book chapter following a reading of her journal articles by a senior academic in her field. Published research is thus evidence that one both belongs to a particular academic community and is contributing knowledge within that community.

Third, future research employment is also influenced by scholarly publications. For instance, a publication record is becoming more important when a student

[2] Australian Education Higher Degree Research students are predominantly female (Pearson, Cumming, Evans, MaCauley, & Ryland, 2008). Hence, I have used the pronouns 'she' and 'her' when referring to Education HDR students throughout this text.

applies for an academic position in a university. Publication has always been important in research intensive universities but the focus on publication in Australian universities is now more widespread due to the influence of Excellence in Research for Australia (ERA) initiative. The rules of this research assessment exercise allow institutions to include the scholarly publications of new employees contracted prior to the relevant census date in their institutional quota (Australian Research Council, 2011b). The publications produced by students during the eligible time period are thus able to be included in the new employer's ERA submission (Australian Research Council, 2011b).

Fourth, funding for future research including post Doctoral Fellowships or participation in competitively funded research projects as named investigators also depends upon a publication track record (Australian Research Council, 2011a, 2011d). Publications produced early in a career are of particular importance because they indicate to assessors that a researcher is likely to be similarly productive in the future (Bazeley, 2003). Thus, funding opportunities for future research are positively influenced by a scholarly publication track record.

Knowing oneself as a scholar, having a sense of belonging as a valued member of a community of academics, and being able to secure future research employment and funding are all valuable to a HDR student. However, the timing of publication activity is also important. Submission of work for publication during the candidacy is essential if the student wants to have a publication track record upon, or shortly following completion of their degree. Early submission accommodates the extended timeframe of publication that frequently includes multiple drafts, submission, review, requests to revise and resubmit, and final publication of the article within the publisher's timeframe. Also, following graduation, HDR candidates typically have

severely limited time and support to publish their results (Bazeley, 2003; Robins & Kanowski, 2008). Thus, to make the most of her research student experience, the candidate will need to submit manuscripts for publication during her candidature.

1.3.3 Scholarly Publications Benefit the University: Australian Context

Scholarly publications written by HDR students impact on the university in two ways. HDR student publications influence both the funding allocated to the university and the regard in which the institution is held in the community (Cuthbert, Spark, & Burke, 2009). Current funding models allow universities to include student publications in their annual Higher Education Research Data Collection (HERDC). These publications impact research funding formulas and increase allocated funding to the university (Australian Government, 2010). The ERA assessment exercise also enables many HDR student publications to positively impact university funding. Student publications are able to be included in the university submission when written by a student who is also a staff member, or when co-authored with an academic staff member (Australian Research Council, 2011b). Results of the recent (2012) assessment will be used to determine future funding allocations (Australian Research Council, 2011c). ERA's impact on the prestige of universities has already occurred. Results of the initial exercise of 2010 were published, scrutinised, and commented on in a number of popular media outlets following their release in early 2011 (Hare, 2011). Eligible HDR student scholarly publications thus provided, and will continue to contribute to a measurable return on the university's investment in research training through funding and prestige.

1.4 THE RESEARCH PROJECT

Given the importance and the perceived lack of Education HDR scholarly publications, this study aimed to investigate effective support strategies to develop

HDR student skills for writing for publication. The issue was explored through a multiple explanatory case study of six recent Education Higher Degree Research graduates who submitted work for publication during their candidacy. Multiple data sources were used. During open-ended interviews, the six graduates and two HDR supervisors from the same Faculty were asked to describe how HDR students accomplished their first publications. Documentary evidence of graduate participants' publications was provided by the graduates and collected from the electronic university repository. In tandem, information about the context in which HDR students learn within the Faculty and university was gathered from documents collected from the university Research Students' Centre and the Faculty research office.

1.4.1 Research Questions

There are four research questions. The overarching research question is:

1. How are some Education HDR students able to write for publication during their candidature?

Three sub-research questions support the initial research question.

2. What training opportunities were available to Education HDR students writing for publication?
3. Which training opportunities did Education HDR students access as they wrote for publication?
4. How did Education HDR students develop expertise in the domain of writing for publication?

1.5 SIGNIFICANCE AND INNOVATION OF THE INVESTIGATION

This part presents the significance (Section 1.5.1) and the innovation (Section 1.5.2) of the study.

1.5.1 Significance

This study is significant in two ways. First, this study investigated HDR student publications within the field of Education. The study was built upon a growing body of research that describes the characteristics of effective and sustainable support for students writing for publication and indicates the value of the topic (Kamler, 2008; Lee & Kamler, 2008). Second, this study is inclusive of Doctoral and Masters (Research) students. The experiences of Masters students are particularly lacking in the literature. Masters students have a significantly shortened time frame of one to two years (full time) in which to complete their degree compared to Doctoral students. Unlike Doctoral students, Masters students are not required to make a significant contribution to knowledge through their studies. Given these conditions, it is perhaps surprising that Masters students publish at all. However, there are published scholarly writers among our Masters graduates and current Masters student body. The experiences of these students are worthy of attention in an environment where their publications are highly valued by the community, as evidence of their competitiveness as a potential PhD candidate, and by the institution.

1.5.2 Innovation

This study reports on effective support for Education HDR students learning the skills required to successfully write and submit a scholarly paper or article. Previous studies in this area tend to describe and evaluate one specific program of support for academic and scholarly writing. Examples include evaluations of workshops (Morss & Murray, 2001), writing groups (Aitchison, 2009; Aitchison & Lee, 2006), writing courses (Paré, 2010), and co-authorship with experienced academics (Kamler, 2008; Lee & Kamler, 2008). In contrast, this study investigated multiple sources of support

as described by Education HDR graduates and Education HDR supervisors within a Faculty of Education in a large metropolitan university.

In addition, this study investigated how two theories might be used together to better support effective learning experiences for students. These theories are Alexander's (2003, 2004) Model of Domain Learning (MDL), a theory regarding the development of expertise (see Section 2.7.1), and Lave and Wenger's (Lave & Wenger, 1991; Wenger, 1998) community of practice (see Section 2.7.2). Alexander's MDL (2003, 2004) is already used to inform many learning experiences provided for HDR students by the Faculty research office, but it was expected that further understanding of how students' learning needs change as they move from being acclimated to a field to competent or proficient scholars would be informative. In tandem, communities of practice (Lave & Wenger, 1991; Wenger, 1998) may provide an understanding of the learning environment that allowed Education HDR students to write and submit work for peer-review despite their relative lack of expertise in the domain of writing for publication.

1.6 OVERVIEW OF THE THESIS

This document is organised into six chapters. Chapter 1 explains the value of HDR student scholarly publications and the need for further investigation into successful provision of support for students wanting to write for publication. It also provides a brief introduction to the focus of this study and discusses the significance and innovation of the study. Chapter 2 presents an overview of the literature regarding the relationship between writing and research and the place of scholarly publication within the higher research degree. It then introduces the conceptual framework, a proposed relationship between Alexander's (2003, 2004) Model of Domain Learning and Lave and Wenger's (Lave & Wenger, 1991; Wenger, 1998) learning as

legitimate peripheral participation within a community of practice. Chapter 3 describes the design of the study and outlines each step in the process, mindful of the tests for quality research and ethical practices in research. Chapter 4 reports on training opportunities available to and accessed by Education HDR students (Research Questions 2 and 3). Chapter 5 focuses on the development of Education HDR student expertise (Research Question 4). Chapter 6 concludes the study by offering an explanation of how some Education HDR graduates were able to write for publication during their candidacy (Research Question 1) and provides the limitations of the study and implications for further research and for research training.

1.7 CHAPTER SUMMARY

It is increasingly important for Education HDR students to publish their research in the form of peer-reviewed journal articles, conference papers, book chapters and books. The community, HDR students, and universities all benefit from the timely publication of HDR research. However, despite the benefits of publication, not all Education HDR students publish during their candidature, and consequently there is limited access to the results of their work.

The Education Faculty research office, HDR supervisors, and special interest groups operating within the Faculty all may support HDR students to write for publication. The literature provides examples of a variety of successful interventions. However, we do not have a comprehensive understanding of the support students find effective, or of their needs as they strive for expertise in writing. The literature is growing, but there is little that assesses all of the support accessed by individual students within a research training environment. This study therefore focuses on the experiences of HDR graduates who wrote and submitted work for peer-review during

the candidature of their degree. In particular, it documents the support that HDR graduates drew upon to write, submit and publish their research.

Chapter 2: Literature Review

2.1 INTRODUCTION

This chapter provides an overview of the theoretical framework of the investigation of Education HDR students who write for publication and explores the literature associated with the topic. The chapter contains five further parts. The first part highlights the importance of writing for publication to research, by presenting two contrasting perspectives. One perspective argues that writing is research (Section 2.2) and the other perspective claims that research is writing (Section 2.3). It also addresses the complexity of writing (Section 2.4). The second part outlines the nature and purpose of higher degree research including the place of writing for publication within the context of research studies (Section 2.4) and overviews effective writing training (Section 2.6). The third part introduces the conceptual framework (Section 2.7) and the research questions (Section 2.8). The final part provides the chapter summary (Section 2.9).

2.2 WRITING IS RESEARCH

This section discusses the perspective that *writing is research* and provides implications for Education HDR student writers. Research writing, including writing for publication, is frequently conceptualised as the creation of new knowledge. Writing is not just one discrete step to be separated from other research processes. Ethnographer, L. Richardson (2010) claims, "I write because I want to find something out. I write in order to learn something I did not know before I wrote it.' (p. 35). For Richardson, writing is a method of inquiry. 'Writing as inquiry' is built upon the complex array of choices that a writer must make regarding the negotiation

of her own position on the topic, the content to be presented and the relative freedoms and restrictions imposed by genre and discourse. The knowledge creation process begins with the selection, synthesis and critical application of existing knowledge to build an argument for the research and to inform the discussion of results. Writing is used to record the choices made. This process of grouping and rearranging ideas frequently suggests new questions, new perspectives and new possibilities (L. Richardson, 2003, 2010).

L. Richardson's (2003, 2010) authoritative work has influenced many researchers and their investigations of interventions designed to improve academic and scholarly writing, and interventions designed to improve research performance, and theoretical work on Doctoral student writing. For example, facilitators of doctoral writing groups draw on L. Richardson's work when describing writing as meaning making, or as the creation of knowledge, rather than the mere recording of knowledge (Aitchison, 2009; Aitchison & Lee, 2006). A report on a course for HDR students writing for publication citing L. Richardson argues for the inclusion of research design skills in such writing courses (Mullen, 2001). L. Richardson's (2003) work is also used to argue that overall research performance can be developed by improving research writing within a supportive environment (Lee & Boud, 2003). Finally, theoretical work is also influenced by the notion of writing as inquiry, with a document analysis of journal 'instructions to authors' and of published article abstracts (Kamler & Thomson, 2004), and a monograph on doctoral work containing references to L. Richardson (Kamler & Thomson, 2006). Thus, it is widely accepted that research writing is integral to the creation of knowledge, and is therefore inseparable from research.

The perspective that writing is research has implications for this study. Researchers must become writers, as it is within the process of writing and rewriting that new knowledge is generated, shaped, and disseminated. In addition, the writing process informs every step of research design, execution, and reporting. Therefore, development of the skills of research writing is central to the development of the researcher's overall research skills. These implications of the writing is research perspective add weight to the importance of effective training of Education HDR students in writing for publication.

2.3 RESEARCH IS WRITING

This section discusses the perspective that *research is writing* and provides implications for Education HDR student writers. The inextricable link between writing for publication and research is also demonstrated when considering that research is writing. Defining and explaining research, Stenhouse (1981) states that

> Private research for our purpose does not count as research. Partly this is because unpublished research does not profit from criticism. Partly it is because we see research as a community effort and unpublished research is of little use to others. What seems to me most important is that research becomes part of a community of critical discourse (p. 111).

Stenhouse argues that research is not complete until it makes a contribution to the literature as a published work (Skilbeck, 1983). Such research then becomes part of a community of critical discourse and the ideas presented benefit from the engagement of other researchers. This engagement includes feedback from research peers. Stenhouse's idea of a community of critical discourse is consistent with the metaphor of writing as a scholarly conversation.

This description of research writing as scholarly conversation appears to underpin much of the literature on HDR student research. For example, the understanding that research is a contribution to scholarly conversation is explicitly listed as one of the crucial elements of student learning in V. Richardson's (2006) essay on the Education doctorate. V. Richardson (2006) argues that it is important that researchers, including students, do not work in isolation. Instead, research needs to be framed within a literature, contextualised by discussions on the results of others and by conceptual works, and published. Research is writing as drawn from the work of Stenhouse (1981) and V. Richardson (2006) argues that research should be peer-reviewed before publication, and strengthened by the comments of expert peers. Once published, the work provides a source of discussion for other researchers to criticise and build upon, thus continuing the conversational thread.

The research is writing perspective can assist novice researchers by informing all stages of a research project. This approach is advocated by Yin (2009) who advises researchers to use the literature review to locate scholarly conversations that may prove to be suitable homes for publications arising from the planned research project. Others also pay attention to the reporting of the project early in the research process. For example, Sigismund Huff (2009) urges researchers to identify a likely scholarly conversation as soon as a research problem is identified. Reading in the area will locate other researchers interested in the topic and likely venues for work to be published. Attention to recently published works relevant to the topic can inform the researcher on the conventions of quality research within the field and guide the research design from planning and implementation, through to analysis and the dissemination of results. The new knowledge contributed will thus have an appropriate 'conversational home,' in the form of a peer-reviewed outlet. Any

reporting can be written in a style appropriate for that outlet. The research is writing metaphor could therefore assist Education HDR students writing for publication through the identification of other scholars already involved in the conversation on the topic. It can also inform the project design and helps ensure their research is publishable. Therefore, the writing is research perspective can support the training of Education HDR students in writing for publication.

2.4 COMPLEXITY OF WRITING

This section addresses the complexity of scholarly writing, and offers some implications for HDR students attempting to write for publication. It draws on the field of systemic functional linguistics (SFL). According to SFL, writing, and meaning-making within any genre require attention to three functions of language (Halliday & Matthiessen, 2004). These functions are the ideational function, or presentation of the topic; the interpersonal function, or presentation of a writerly self in relationship to the reader; and the textual function, or maintenance of a consistent flow of meaning through the text. Every clause within a text performs the three functions. Therefore, to produce a successful text, a writer needs to demonstrate constant genre-appropriate management of all three functions.

Although not directly aligned to SFL, the work of Ivanic (1998) describes how a writer's identity is expressed within each of the three textual functions. This adds a further layer of complexity for novice writers. Through the ideational function, a writer presents their individual's values and beliefs regarding reality and the specific topic. Through the interpersonal function, the writer expresses their sense of their status. Finally, through the writer's ability to access and use genre and discourse-appropriate language choices the textual function is maintained. The expression of self is present in every clause, and woven through the text. The HDR student writing

for publication will therefore have to become proficient at presenting themselves as a credible authority across the three textual functions. However, HDR writers may be grappling with the ideas they want to express, lacking in the confidence required to present themself as a credible writer, and developing fluency in the textual conventions of the genre and discourse. Taking a position as an authority while being at some level a novice may lay at the heart of difficulties HDR students find with any scholarly writing (Kamler & Thomson, 2006).

Some writers may be relatively advantaged in this complex activity of scholarly writing because they can draw upon previous life experiences and experiences with writing to express an appropriately authoritative self (Starfield, 2002). It may even seem that because any HDR student has successfully completed a Bachelor's Degree or a Higher Research Degree prior to undertaking their current writing project, they will automatically be able to write for publication will little need for intervention. However, many HDR student writers require support to write for publication, and that many if not all students struggle with writing in the new scholarly genres (Kamler & Thomson, 2006; Mullen, 2001).

2.5 HIGHER DEGREE RESEARCH IN EDUCATION

This Section argues that contribution to knowledge and research training are two purposes of HDR education. The section also indicates how these purposes are relevant to HDR student publications. First, *contribution to knowledge* is a requirement of the doctorate. Researchers reporting on HDR policy claim that Doctoral students need to make a contribution to knowledge within their respective fields (B. Evans, 2007; T. Evans, Evans, & Marsh, 2008; Hoddell, Street, & Wildblood, 2002; Powell & Green, 2007a). For example, a synthesis of doctoral degrees and policy worldwide states that, "what should be common in doctoral study

is a contribution to the area concerned, which means that after the thesis is made public the area is better informed than it was before" (Powell & Green, 2007b, p. 167). This synthesis did not explicitly recommend or reject policy to disseminate the results beyond the thesis to guarantee or demonstrate a contribution to knowledge. However, researchers and Doctoral students frequently argue that publications are required to ensure this contribution has been made (Dinham & Scott, 2001; Kamler, 2008; Leonard, Becker, & Coate, 2005; V. Richardson, 2006; Robins & Kanowski, 2008).

Publication of HDR student research indicates that a contribution to knowledge has been made and allows this contribution to be shared. Put succinctly by researchers, Dinham and Scott, (2001) "doctoral results must be published to become part of the accessible accumulated body of human knowledge" (p. 45). Doctoral students appear to agree with this statement. For instance, a Doctoral student interviewed as part of a multiple case study of students in Education and Science argued that journal articles, not the thesis, provided people access to his work. Kamler (2008) uses two of the student's phrases, to claim that the student's "account distinguishes between the thesis text – an inert object which 'goes to dust' – and the journal publication – 'the real public face of the thesis'" (p. 291). A further report written about the experience of completing a PhD by publication also links publication to contribution to knowledge. The graduate author was prompted to pursue her PhD by her desire to contribute to policy and practice, and she claimed that publications were needed to make this contribution (Robins & Kanowski, 2008). The view that contribution to knowledge is an important aspect of doctoral research and that peer-reviewed publications are required to achieve this contribution appears to be relatively widespread.

Second, the role of *research training* in higher research degrees relevant to HDR publication applies to both the Masters and Doctoral degrees. Students undertaking either degree are expected to acquire research skills, including writing for publication, as defined by the discourse of their discipline or field (Dinham & Scott, 2001; Hutchinson & Bromley, 2007; V. Richardson, 2006). However, writing for publication might not be a requirement of their course. A disconnect between policy and practice on one hand, and the viewpoint of researchers on the other is apparent. For example, in the United States, there appears to be no explicit policy addressing HDR students and writing for publication despite the support of researchers in the field. For example, V. Richardson (2006) and Mullen (2001) both advocate training in publication skills as part of a generic skills training for Doctoral students in education. Similarly, in the United Kingdom, although funding is allocated to institutions to facilitate research training programs, there are no mandated training areas (Hutchinson & Bromley, 2007). The result is that many, but not all, institutions acknowledge the need for training in writing for publication and allocate their funds for this purpose (Hutchinson & Bromley, 2007). The situation in Australia is similar again. A survey of policy and research degrees offered in Australia found no specific advice advocating training in writing for publication (T. Evans, et al., 2008). However, many Australian academics support training for writing for publication and describe strategies that address HDR student writing and publication (Dinham & Scott, 2001; Kamler, 2008; Kamler & Thomson, 2004; Lee & Kamler, 2008; Robins & Kanowski, 2008). Hence, although HDR student writing for publication may not be explicitly supported by policy, it appears to be widely accepted by researchers in the field as a research skill requiring training and worthy of support.

2.6 INTERVENTIONS TO IMPROVE ACADEMIC AND SCHOLARLY WRITING

This Section presents literature outlining support for writing. Literature on writing support for HDR students in Education who wish to write for publication is scarce, but growing. Because this is a developing field, reports on training provided to academic staff, and support for writing the thesis have been included in this necessarily broad review. The literature is dominated by reports on a single or multiple interventions with academics or HDR students facilitated by the author, or authors (Aitchison, 2009, 2010; Aitchison & Lee, 2006; Caffarella & Barnett, 2000; Cuthbert, et al., 2009; Lee & Boud, 2003; Lee & Kamler, 2008; Morss & Murray, 2001; Mullen, 2001; Nolan & Rocco, 2009; Paré, 2010). Such interventions include writing courses, writing retreats, supervisor support, and writing groups.

Writing courses can provide powerful support for writers new to writing for publication. HDR students benefit from writing courses that are designed to enable them to produce research publications. For example, Caffarella and Barnett (2000) reported on a study of Doctoral students in educational leadership who had participated in one of five cohorts of an academic writing course. Data from interviews, focus groups, email questionnaires and documentation of the reaction of one cohort was collected as they experienced the course. Analysis of these data revealed that learning through face-to-face feedback and the ongoing and iterative nature of the support offered was appreciated by the students. Mullen (2001) also provided a writing course for HDR students. She facilitated peer-review, taught specific skills of grammar, and drawing on L. Richardson's (2003) work, encouraged students to develop the design of their research projects within the class. It is not clear how Mullen collected the data on her writing course, but she claims that at least one student who had previously put aside a piece of writing was able to use the

course to rework it to final submission. In another study, Nolan and Rocco (2010) reflected on three courses they facilitated for Masters and Doctoral students in Education and Social Sciences. Data on publication attempts and successes of their students was collected. These data indicate that incorporation of workshopping, peer-review, and explicit teaching of the technical elements of writing helped students to attempt and achieve publication. The authors also note that students who received advice to revise and resubmit after the completion of the course were likely to abandon the writing, perhaps indicating that support was still required by the students needing to negotiate this step in the publication process. A further study was reported by Paré (2010). He reported on an elective writing course offered as a seminar series to PhD students. This was a two year course entailing weekly seminars with a focus on writing and becoming an academic writer. Skills developed by the HDR students included freewriting, technical writing skills and associated skills of developing productive relationships with other writers. The numerous reports on writing courses for HDR students indicate that such courses can assist participating students to write for publication.

Academic staff writing for publication also benefit from writing courses. For instance, Morss and Murray (2001) report on a study of a course that provided ongoing support for academic staff writing for publication. This evaluation gathered program agendas, lists of participants' initial goals and final outputs, and participant perceptions of program benefits. Specific skills, including the development of productive writing habits such as goal setting were taught during the six month program. The study reported that all participants met or exceeded their publication goals. Peer and group support was beneficial, particularly in the area of setting and meeting those writing goals. Courses that develop skills and incorporate

opportunities to actively participate in a community of writers can clearly be an effective source of support for novice staff and HDR student writers.

Mentoring from HDR supervisors is another reported source of support for novice HDR student writers who are working on research publications. Dinham and Scott (2001) found in an email survey of recent Doctoral holders that encouragement and support from HDR supervisors helped graduates write for publication. Students not provided with this support were unlikely to publish. Several participants were able to name the specific skills they developed with the assistance of supervisors that enabled them to write and publish. A case study by Lee and Kamler (2008) also supported the importance of mentoring from HDR supervisors. They reported on one supervisor who supported a student as the student responded to the feedback of a journal reviewer. This process empowered the student to address the feedback provided and to successfully resubmit her article. Hence, mentoring by a supervisor provides support during the writing and publication process and fosters the skills needed for writing for publication.

Co-authoring is another effective form of support HDR supervisors provide to their students. Kamler's (2008) case study reported on repeated, in depth interviews of three Education and three Science Doctoral students. Co-authoring with a supervisor was reported as an enabling structure for learning to write for publication. Students who co-authored used the pronoun 'we' when describing the work required to achieve publication. Thus, the sense of working together as a community occurred in this context. Robins and Kanowski (2008) also reported on the experiences of a PhD by Publication student who co-authored with her supervisor. They state that co-authoring with the supervisor assisted the student to write and publish her first few articles. Later articles were published solely by the graduate. This indicates that

writing skills were developed within the student-supervisor relationship and that these skills were then successfully used independent of, or with greatly reduced support from the supervisor. Like supervisor mentoring, co-authoring with a supervisor provides a sense of support and community as well as skills required for writing and publication.

Writing groups for HDR students appear to offer similar benefits to writing courses and supervisor support, including writing skills and the production of publications. For instance, Cuthbert et al. (2009) reported on a focus group study of 20 participants of multidisciplinary writing groups for HDR students, and found that monthly workshopping and peer-review sessions combined with skill and knowledge seminars over a 12 month period were highly effective. The original 26 writing group members drafted for submission a total of 17 articles, five chapters and six conference papers. Groups for academic staff writing for publication were similarly effective. Lee and Boud's (2003) evaluation of two writing groups for academic staff collected records of group activities and participant responses. These records, an email-based survey of members, and a collection of papers written by members about the writing group process showed that mutuality, or a peer relationship characterised by a common goal was a feature of a productive group.

Further reports on writing groups in research settings focus on the production of the thesis. It appears that similar benefits were provided to participants of thesis-writing groups as to participants attending groups focussing on writing for publication. For example, Aitchison and Lee (2006) in their case study of thesis writing groups identified peer-review by group members and a particular sense of community to be two important factors that can help writing group members succeed. In a later study, Aitchison (2009) reported on a retrospective evaluation of

additional thesis writing groups she had facilitated. An electronic survey, focus group and recording of a writing group meeting provided data for the study. Again, peer-review by and for group members and a supportive community helped members achieve their writing goals. In a further theorised report of 11 writing groups that she has facilitated for various lengths of time during the preceding 8 years, Aitchison (2010), reported that groups with a focus on any sort of academic or scholarly writing benefit from explicit skill development that occurs both at serendipitous moments, and as part of a planned approach. Again, Aitchison led and modelled peer-review, and participants benefited from sustained activity within the group over time, gradually become more able to review work using grammatical frames and develop their own writing.

Writing skills, a sense of community and peer review were found to be important by other researchers who facilitated thesis writing groups for HDR students. For instance, Lee and Kamler (2008) claim that a group focus on explicit language instruction and peer-review enabled students to develop and practice skills and to gain the required confidence to write. Finally, an academic writing group for HDR students facilitated by a supervisor was the subject of a narrative study (Lassig et al., 2009). Interviews and reflections of group members and the facilitator revealed that explicit attention to building writing skills, and opportunities to write collaboratively led to improvements in technical skills, planning and conceptual elements of writing.

This review found that writing courses, supervisor support and writing groups can all effectively support academic writing. It is consistent with the review of literature reported by McGrail, Rickard and Jones (2006) who listed courses, coaching and writing groups as worthwhile methods to improve the publication track

and writing skills of academic staff. In addition, this review has identified three elements as being highly beneficial to novice academic and HDR student writers learning to write for publication. These elements are working relationships, opportunities to develop writing skills, and sustained periods of time.

A *working relationship* is the first element that furthers learning about writing. Such relationships are mentioned as productive writing relationships (Paré, 2010), as a community defined by peer relationships and a common goal (Lee & Boud, 2003), as a sense of community (Aitchison, 2009, 2010; Aitchison & Lee, 2006), or, more simply, as group support (Morss & Murray, 2001). Particular practices documented also indicate the existence or working relationships. Collaborative writing among group members was found to helpful by Lassig (2009). Peer-review similarly demonstrates the support of a community of fellow learners and was reported as beneficial for students learning to write for publication (Cuthbert, et al., 2009; Mullen, 2001; Nolan & Rocco, 2009; Paré, 2010) and the thesis (Aitchison & Lee, 2006; Lee & Kamler, 2008).

Provision of o*pportunities to develop writing skills* is the second element of successful writing interventions. Within the literature reported here, these skills were most frequently described as the teaching of the technicalities of writing, including grammar (Cuthbert, et al., 2009; Lassig, et al., 2009; Lee & Kamler, 2008; Morss & Murray, 2001; Mullen, 2001; Nolan & Rocco, 2009; Paré, 2010). Other skills taught included goal setting (Morss & Murray, 2001), how to develop productive working relationships, and how to run writing groups (Paré, 2010).

Sustained periods of time is the third element common to several successful interventions on support for novice writers. This was described by Caffarella and Barnett's (2000) participants as ongoing, iterative support. Similarly, Atchison's

(2010) thesis and publication writing group participants reported enjoying sustained activity over time. Nolan and Rocco (2009) also implied that support is best sustained over time. They claimed that if they had been able to offer their publication writing course over a longer time period and thus enable support for students responding to peer-review, publication rates of their students may have increased. Finally, Paré (2010) claims that the extended, two-year period of his writing seminar series enabled him to encourage practices such as freewriting that he views as integral to building ideas, yet might not be considered as an effective use of time for short courses.

The three elements; working relationships, opportunities to build writing skills, and sustained periods of time, appear to be important to the development of writing and writers. They indicate that HDR students may best develop as writers within a community. This community may take the form of a long-term writing course, a writing group, or a student-supervisor relationship. Communities that foster learning appear to be defined by a sense of belonging and by opportunities to learn and develop skills while the authentic work of producing a piece of scholarly or academic writing is undertaken. The next section provides a conceptual framework for this study that considers the literature outlined above and further explains the value of learning within a community.

2.7 CONCEPTUAL FRAMEWORK

This study will be investigated using two complementary frameworks. First, a model of expertise (Alexander, 2003, 2004) provides a framework for understanding how an HDR student might develop from being a novice writer to one contributing new knowledge in the form of peer-reviewed publications. A theory of concept development (Vygotsky, 1986) supplements the growth of knowledge described by

this model (Section 2.7.1). Second, a theory of situated learning within a community may explain how a novice writer can be supported by a community to produce a publication before being fully proficient within a field (Lave & Wenger, 1991; Wenger, 1998). The Zone of Proximal Development (Vygotsky, 1986) is used to further explain why the community of practice can be an effective site of learning (Section 2.7.2).

2.7.1 Model of Domain Learning

The development of Proficiency in any field has been conceptualised by Alexander (2003, 2004) in her Model of Domain Learning (MDL). This model describes the changes that occur within the components of knowledge, interest and strategies for learning as an individual ventures from initial engagement with an academic subject to Proficiency. Three phases in this journey to expertise are proposed. These phases are Acclimation, Competence and Proficiency.

Acclimation begins with initial contact with the domain of interest. Interest in the topic is likely to be situational, or dependent upon a highly arousing topic, such as a controversial current event. Strategies for learning will be shallow, confined to rereading, and paraphrasing. In this phase, knowledge is fragmented and lacks any structure. The learner is not able to make critical judgements of what may be relevant to their needs or what may be inaccurate. The move to the following phase of Competence can be made by the development of any one of the components of interest, knowledge or strategies for learning.

Competence is characterised by the learner's developing personal interest in the subject area and a diminished reliance on situational interest. Strategies for learning now include critical thinking, and learners are now able to make judgements regarding credibility and relevance to a specific topic of inquiry. Competence is also

characterised by an increased depth and breadth of knowledge, and by the development of a structure which the learner can use to map a relationship between different knowledges. It is likely that the competent learner can predict gaps in information required to perform a task. Alexander (2003, 2004) theorises that the move from Competence to Proficiency requires a synergy across the components of knowledge, interest and strategies for learning.

Proficiency is the final stage in the MDL. Importantly, it does not signal an end to growth, because the learner is now able to sustain their own growth in the domain. Interest is self-sustained. Strategies for learning within the field are deep. Knowledge is now broad and connected, and inclusive of the domain methodologies used to further develop knowledge. The learner is now identifying problems and contributing new knowledge within a domain. Proficiency generates its own continued development as the three components of knowledge, interest and strategies for learning work synergistically creating the conditions for sustained engagement and contribution to the field. A learner in the phase of Proficiency is likely to be a recognised authority in their field (Alexander, Sperl, Buehl, Fives, & Chiu, 2004). It is therefore unlikely that a HDR student who commences as a novice writer will become a proficient writer during the candidature of a research degree. Table 2.1 provides an overview of Alexander's (2003, 2004) MDL.

Table 2.1

Alexander's (2003, 2004) Model of Domain Learning

	Acclimation	Competence	Proficiency
Interest	Situational	Personal interest grows with less reliance on situational interest	Personal interest very high enabling sustained engagement
Strategies for Learning	Shallow	Shallow and Deep	Deep
Knowledge	Limited, fragmented Difficult to discern inaccurate or irrelevant knowledge	Quantitative & qualitative leap in depth and breadth of knowledge and a cohesive structure	Personal interest very high enabling sustained engagement

The goals of the MDL are to understand how expertise develops and to inform teaching strategies for improved student learning and development. Therefore, it emphasises changes in knowledge and processes and indicates the conditions required for movement from one stage to the next. The MDL suggests that movement between stages is able to be facilitated by thoughtful provision of learning experiences tailored to suit a learner's interest, ability to assimilate and use new knowledge, and understanding at any point in time. The MDL is therefore a theory of the development of expertise that can contribute to education programs, including those that assist HDR student progress to Proficiency within the domain of writing for publication. Alexander has used the MDL to inform a study of undergraduate, graduate and Faculty from the field of Special Education. (Alexander, et al., 2004). Other authors have used the MDL to inform studies of undergraduate and graduate therapy students (Langan & Athanasou, 2002), and the MDL was also used as the basis for developing writing skills in a doctoral writing group (Lassig, et al., 2009) (see Section 2.6).

A key point of interest to a study of HDR student writers is that contribution to knowledge is a characteristic of Proficiency. According to the MDL, learners in the phases of Acclimation and Competence are not yet able to make a contribution to knowledge. This is potentially problematic if HDR students are being asked to contribute knowledge through publications while they are not yet be proficient within this domain. Thus, HDR students might not be able to produce a quality peer-reviewed publication independently. The interpretation of the MDL as a process requiring development over time across components of interest, learning strategies and knowledge aligns with the literature suggesting that HDR students find the process of writing for publication problematic. Students may be attempting to write for publication – a performance of Proficiency – while functioning in the phases of Acclimation or Competence. The MDL could thus explain why HDR students capable of completing a thesis with supervision so rarely publish without the presence of specific assistance with this new writing task. For example, Dinham and Scott (2001) claim that the absence of encouragement and support from supervisors was associated with students not publishing. HDR student, Robins (Robins & Kanowski, 2008) reported that she co-authored her first two articles with her supervisor before she attempted a sole-authored publication. Tellingly, Kamler's (2008) Doctoral students who did not co-author with supervisors were unlikely to publish. Contributions that were made by these students were restricted to non peer-reviewed work in professional journals and conference papers. Both the MDL and literature on HDR student writers (Dinham & Scott, 2001; Kamler, 2008; Robins & Kanowski, 2008) point to difficulties experienced contributing new knowledge as publications before one is proficient in a field and to the key role that supervisors play in this process.

Because the component of knowledge is central to this particular study, further elaboration on the development of knowledge follows. Knowledge development underpins Vygotsky's (1986) work on the development of thought. Thus, I drew upon Vygotskian (1986) theory. Although the focus of Vygotsky's (1986) work was initially children, his work in the development of thought has been used successfully to describe the thinking of undergraduate teaching students as they work with unfamiliar mathematical processes (Berger, 2004). Hence, it has the potential to provide insight into HDR's development in writing for publication. The progression of thought from complex to concept is also consistent with Alexander's (Alexander, 2003, 2004) MDL, as elaborated below.

When a learner initially grapples with a new idea, they develop a group of associated ideas, or a *complex* Vygotsky (1986). In the complex, associated ideas and the relationships between them are only able to be observed by the learner in their everyday world – links between ideas and therefore *concrete*. A learner might talk about the structure of an article compared to that of the thesis. Relationships between ideas are frequently described in terms of how one part serves the purpose of another – links drawn are *functional*. Here, a learner might state that people publish to improve their career prospects. Finally, relationships between ideas are also *disparate* in the level of generalisation, with ideas at different levels of generalisation, such as 'publication' and 'feedback' placed side by side. They are disparate in content as well, with unrelated ideas, such as 'sharing' and 'getting a job' grouped together. A complex extends Alexander's (2003, 2004) description of knowledge in the Acclimation stage as fragmented and lacking structure. As thought develops, Vygotsky (1986) argues that the learner may then develop for themselves a *concept*.

Outwardly the concept and complex appear the same (Vygotsky, 1986). The same ideas may be associated, and similar vocabulary might be used. However, the relationships drawn between ideas within a concept are transformed. In a concept, such links are abstracted – individual aspects related to multiple ideas are taken and generalisations formed. For example, a learner may now use the abstraction 'altruism' to describe their reason for writing a particular article for publication, and then link both (a) sharing ideas with a community in need, and (b) developing the skills of a more novice writing partner to their concept of writing for publication. Links that were formerly functional are now logical. Unlike complexes, concepts are able to be consciously and deliberately examined and used by the learner. A learner with a fully developed concept of the peer-review process may deliberately submit an article to a journal in order to elicit feedback to further develop the work for publication, and if rejected, resubmit to a different journal. In this Master's study, articulation of concepts will be used as evidence of movement into the phase of *Competence* described in the MDL. The presence of concepts and the independent contribution of new knowledge to the domain of learning will be used as evidence of *Proficiency* in the field.

The MDL (Alexander, 2003, 2004) and the development of concepts (Vygotsky, 1986) identify a conflict between the demand on students to contribute to knowledge and their status as acclimatising or competent within a field. Writing for publication can thus be seen to operate in two ways. First, writing for publication is a contribution to knowledge, and therefore, an expression of domain proficiency. Second, writing for publication might also initiate the movement between the phases of the MDL. Contributing to knowledge by writing for publication can therefore be seen as a means of both developing and expressing expertise in the field. One theory

of learning that could explain how the practice of writing for publication can develop the writing expertise of novice writers is Lave and Wenger's (Lave & Wenger, 1991; Wenger, 1998) theory of learning via participation within a community of practice.

2.7.2 Legitimate Peripheral Participation in a Community of Practice

Learning by participation within a community of practice offers a solution to the problem of how writing for publication could be both an expression of Proficiency and a tool to create the conditions required to move closer to Proficiency (Lave & Wenger, 1991; Wenger, 1998). Learning is an aspect of all social practice and initially occurs as a newcomer contributes to the activities of a community in a small, but meaningful way. Learner participation in the activities of the group is 'legitimate' in that it is accepted by all members of the community as both a contribution to the group and as a performance of membership. It is 'peripheral' in that it occurs under the direction of the more expert members of the group, such as a HDR supervisor. Ideally, there is an understanding that there will be movement toward full participation as mastery of tasks is accomplished. Thus, learning is supported and occurs within a community of practice.

A community of practice is a group characterised by a commitment to development within a specific area of interest. Members engage in mutually beneficial activities, building relationships and contributing to a shared repertoire of practices and resources. These resources include tools, knowledge, and problem solving strategies which can be understood as shared practice (Lave & Wenger, 1991; Wenger, 1998). HDR students not yet proficient within a domain could well develop publications and the skills needed to write for publications simultaneously within a community of practice. This community could be orientated towards their research topic, or could be focussed on the domain of writing for publication.

Many researchers explicitly draw on the community of practice framework to inform their work with writing groups (Aitchison, 2009; Aitchison & Lee, 2006; Lee & Kamler, 2008). Writing courses can also encompass elements of shared peer-review, and opportunities to learn, develop and use metalanguage about writing (Caffarella & Barnett, 2000; Morss & Murray, 2001). The structure of such courses can perhaps be understood as communities of practice providing opportunities for legitimate peripheral participation. Although communities of practice are positioned as a possible tool to draw the conversation regarding HDR learning beyond a discussion on research supervision (Boud & Lee, 2005), some aspects of the mentoring provided by a supervisor can also be explained by the community of practice metaphor. For example, Kamler's (2008) study provides some Doctoral student stories about co-authoring with their supervisors. The Doctoral students, used the pronoun 'we' as they talked about sharing the problems of writing for publication with their supervisors and developing strategies to publish together. Students who co-authored with their supervisor, and Lee and Kamler's (2008) individual student working through a reviewer's comments with her supervisor, all contribute meaningfully to the work of producing a publication. In all cases the situations described appear to include elements of a community of practice undertaking authentic work. Communities of practice and legitimate peripheral participation appear to be well established, flexible and useful frameworks for informing a study on effective support for HDR students writing for publication.

Despite the widespread application of the community of practice model to learning, there is some evidence that suggests that communities of practice are not necessarily democratic. Issues of power, including exclusion and marginalisation of some learners may impede the learning of some participants (Lea, 2005; Tusting,

2005). In addition, hierarchical relationships present in the cultural environment can also impede the effective and democratic functions of a community of practice (Kerno, 2008). The supervisor-student relationship is hierarchical due to the more expert status of the supervisor. Therefore, the established structure and practices of these relationships may impact negatively on the effective functioning of a community of practice that includes both students and supervisors. Further, time in terms of opportunities to attend regularly to the functions of the community, and sustained participation in that community has also been identified as essential to the success of communities of practice (Kerno, 2008). The lack of sustained time was identified earlier as a potential problem in the provision of writing support for HDR students (Nolan & Rocco, 2009; Paré, 2010). Hence, a community of practice will not automatically create an ideal learning environment for HDR students wanting to publish.

Aspects of Vygotskian theory were drawn upon in the original conceptualisation of community of practice (Lave & Wenger, 1991; Wenger, 1998). Vygotsky (1986) proposed that a Zone of Proximal Development (ZPD) exists whereby with some guidance a learner can perform a task that they would not be able to perform alone. Specifically, the ZPD refers to the gap between what a learner can perform independently and what they can achieve with assistance from a more expert other. This performance is not imitation, it is completion of a task following a strategic amount of help. This help could include prompting, asking a leading question, or talking through the first step towards the solution of a problem. The ZPD remains a useful tool to describe how a community of practice may enable a novice to perform tasks requiring an expertise they have yet to achieve. Importantly, spontaneous concepts typically lacking conscious and volitional control can have

these aspects developed within the ZPD (Vygotsky, 1986). That is, the developing structure of knowledge, and the ability to make use of this knowledge in new ways are both assisted by the company of experts. Vygotsky's (1986) ZPD was originally developed in the context of children's learning, However, it has supported research on adult learners in university settings including a study of undergraduate science students learning via an apprenticeship to experienced Faculty academics (Hunter, Laursen, & Seymour, 2006), and an assessment of the learning needs of PhD students (Wright, 2003).

2.8 RESEARCH QUESTIONS

This study will use Alexander's (2003, 2004) Model of Domain Learning (MDL), Lave and Wenger's (Lave & Wenger, 1991; Wenger, 1998) legitimate peripheral participation in a community of practice, and Vygotsky's (1986) concept development and Zone of Proximal Development to investigate how students engage with opportunities to learn the skills and aptitudes required to write for publication. The findings will be used to inform effective programs of support for HDR student publication. The overarching research question is:

1. How are some Education HDR students able to write for publication during their candidature?

Three sub-research questions inform this overarching research question.

2. What training opportunities were available to Education HDR students writing for publication?
3. Which training opportunities did Education HDR students access as they wrote for publication?
4. How did Education HDR students develop expertise in the domain of writing for publication?

2.9 CHAPTER SUMMARY

Research cannot be separated from writing because writing and meaning making occur together as researchers critique and synthesise existing information with new findings to contribute to new knowledge. Complementary to this view, research by definition requires a published contribution to stakeholders that involves peer critique (Stenhouse, 1981). Therefore the skills of writing for publication are needed by all researchers. However, writing for publication is a complex task and may initially require extensive support.

Research students are expected to learn the skills of research, including the skills of writing for publication. Doctoral students are also explicitly expected to make a contribution to knowledge. However, the definition of research (Stenhouse, 1981) implies that Masters students may also aspire to make such a contribution. A demand for research skills and a demand to make a contribution to knowledge both create a need for effective training in writing for publication.

Theory and literature on writing support demonstrate that effective writing training has many forms; however successful interventions share some common characteristics. These include belonging to a community, meaningful participation in the community and opportunities to learn and develop skills.

From a theoretical perspective, Alexander's (2003, 2004) Model of Domain Learning (MDL) also suggests that Education HDR student may need support when writing for publication. The MDL implies that Education HDR students are likely to be in the phases of Acclimation or Competence within their academic domain however, making a contribution to knowledge, such as a scholarly publication, is a characteristic of a more proficient learner. Legitimate peripheral participation within a community of practice (Lave & Wenger, 1991; Wenger, 1998) and the provision of

a strategic amount of assistance (Vygotsky, 1986) potentially explain how some students manage to publish their research. According to community of practice theory, HDR student writers are able to develop the skills needed to successfully publish within a community of experienced writers, and are gradually able to produce such work independently, thereby extending their ZPD.

Chapter 3: Research Design and Methods

3.1 INTRODUCTION

This chapter describes an investigation of former Education HDR students who have written for publication. The investigation specifically focuses on the support for writing accessed by these graduates. This chapter has four further parts. The first part details and justifies the choice of case study design (Section 3.2). The second part presents the specific design of this project including data collection, management, and analysis (Section 3.3). The third part addresses the quality of the study and outlines the ethical issues pertinent to the project (Section 3.4). The final part provides the chapter summary (Section 3.5).

3.2 RESEARCH DESIGN: THE CASE STUDY

This research project investigated the support accessed by Education HDR graduates who wrote for publication using case study design. There are six reasons why case study design (Yin, 2003) was chosen. First, this study seeks to look at student experiences of writing for publication from a new perspective. Previous work related to this topic includes many case studies, as outlined in the literature review (see Section 2.6). However, these studies frequently report on interventions facilitated by the reporting authors (Aitchison, 2010; Caffarella & Barnett, 2000; Cuthbert, et al., 2009; Morss & Murray, 2001). Other case studies address only one influence on student writing such as the relationship between students and supervisors as they write together (Kamler, 2008). There has been little attention to the contextual factors that have impacted on the results. This study focussed on context and sought to explore communities of practice in which Education HDR students participated,

inclusive of and extending beyond the supervisor-student relationship. Unlike other studies, it did not examine a specific program of support for writing.

Second, student writing for publication arises at specific times and in particular settings. Attention to the context will enable the inclusion of information pertinent to the study. Case study was therefore an appropriate method of empirical enquiry because the case studied is both a bounded system – one that is contained to a particular time, place and circumstance – and yet may be difficult to distinguish or examine apart from the context in which it arises (Yin, 2003, 2009). In this study, the cases were six Education HDR graduates who had submitted work for publication during their degrees. These cases were bound by the period of student candidacy for their Masters or PhD within a Faculty of Education at an Australian metropolitan university. The contexts included the scholarly relationships, activities and environment the graduates experienced during their candidature. The cases were addressed within their particular contexts to fully understand student writing for publication, Case study design facilitated such an investigation.

Third, this research has the potential to contribute to the development of theory. Case studies have the potential to make such a contribution (Yin, 2003, 2009). Yin (2003, 2009) argues that case studies allow the comparison of multiple cases to make analytical generalisations in which cases are used to explain and predict patterns of similarity and difference between case outcomes. Analytical generalisation is important because it can enrich an understanding of Alexander's (2003, 2004) Model of Domain Learning (MDL) by looking at how participation in communities of practice (Lave & Wenger, 1991; Wenger, 1998) assists Education HDR students to attain expertise in the domain of writing for publication (see Sections 2.7.1 & 2.7.2). Case study design allows such a contribution to be achieved.

Fourth, comprehensive attention to context and development of theory require a specific design. Case studies can occur in a variety of formats and can thus be tailored to meet the needs of the specific topic of investigation (Yin, 2009). This is a multiple, explanatory case study. A multiple case study potentially sacrifices the ability of the researcher to provide depth of coverage within the constraints of time and finances that a single case would allow. However, examination of a number of cases allows the researcher to make stronger analytical generalisations. An explanatory study is suitable for the development of analytical generalisations as the iterative process of theory use and development allows prediction and explanation of how and why the phenomenon occurs where and when it does. Case study design was therefore flexible enough to accommodate the needs of this research project.

Fifth, this study was informed by Stenhouse's (1981) definition of research that requires research to be published (see Section 2.3). Therefore, the study is best supported by a methodology that is orientated toward publication. Yin (2003, 2009) advises researchers to consider publication from the design stage onward. Research reports and the shape these may take is given considerable attention throughout his work on case studies. Yin (2009) also advocates the use of theory to locate the study within a literature and thus ensure that knowledge and understanding will be increased. Case study design was thus suitable for a research project oriented to contribution towards knowledge and publication.

Finally, to make the desired contribution to knowledge, this research needs to be rigorous. Yin (2003, 2009) provides guidance on how a case study should be designed and carried out to meet the tests of quality research (see also Section 3.4.1). This principle is also outlined in many guides for the ethical conduct of research,

including the Australian code for the responsible conduct of research (National Health and Medical Council & Australian Research Council, 2007).

3.3 DESIGN OF RESEARCH

3.3.1 Research Questions

The research questions of this study arose from the literature on student and academic publication (Dinham & Scott, 2001; Kamler, 2008; Lee & Kamler, 2008; Morss & Murray, 2001) and from theory (Alexander, 2003, 2004; Lave & Wenger, 1991; Wenger, 1998). The overarching research question is:

1. How are some Education HDR students able to write for publication during their candidature?

Three sub-research questions support the summary research question.

2. What training opportunities were available to Education HDR students writing for publication?
3. Which training opportunities did Education HDR students access as they wrote for publication?
4. How did Education HDR students develop expertise in the domain of writing for publication?

3.3.2 Cases

There were six cases, each of whom was a recent (2010-11) Education HDR graduate who had submitted work for peer-review prior to the completion of their degree. None of these graduates had undertaken their degree by publication. Case selection was based on two criteria. First was *recent graduation,* not current HDR student status. Graduates were included because this project may have unduly interrupted the research of current student participants, and because of the anticipated difficulty of finding suitable participants who would be willing to commit sufficient time to the interview. The second criteria was *submission of work for peer-review*,

rather than publication. Although this research is focused on the experiences of graduates who wrote for publication during their candidature, insisting that the cases had been published in a peer-review outlet was thought too demanding a criterion given the somewhat protracted time period that submission, receiving and responding to peer-review, resubmission and publication might take.

After the two criteria of recent graduation and submission of work for peer-review were met, a diversity of cases was sought to allow the collection of a range of experiences. For this reason, all Education HDR graduates who completed in the years 2010 to 2011 were invited to participate in the study. Seven graduates replied to the invitation to participate. Following an email that fully outlined the conditions of the study, six of these graduates agreed to participate in the study. One did not respond to this email, or to a reminder email, and was therefore not included in the study. Thus, the six cases were identified.

Four female graduates and two male graduates were included as cases. One of the graduates had completed a Masters Degree (Research). Three of the graduates had completed a PhD. One graduate completed a Masters Degree (Research), before immediately commencing, then completing a PhD. The remaining graduate participant requested that her qualification details be withheld to minimise the possibility that her identity would be revealed. However, she had graduated with an HDR degree in the specified period. Table 3.1 outlines the cases by pseudonym, qualifications, and the status of publications submitted during their candidature.

Table 3.1

Cases

HDR Graduate Pseudonym	Degree	Status of publications submitted prior to graduation from HDR degree
Amanda	PhD	Conference papers published
Genny	PhD or Masters (Research) Participant requested this data be withheld for confidentiality	Conference papers published
Edie	Masters (Research)	Article submitted
Emily	PhD	Book chapter, article, and conference papers published
Mark	PhD	Article submitted
Zara	Masters (Research) and PhD	Conference papers and article published

3.3.3 Other Participants

In addition to the six cases, two supervisors supportive of HDR student publication were included as participants. These supervisors were not cases. Their role was to provide contextual information to the study. All current Education HDR supervisors were invited to be interviewed by the study. Two supervisors responded and agreed to participate. With one exception, the supervisors had not supervised any of the graduates selected as cases. This exception was Dr Fiona who had supervised HDR graduate, Edie.

3.3.4 Data Collection

Case study data needs to provide rich contextualised information. Yin (2009) suggests that case studies therefore need to draw upon multiple sources of evidence to ensure adequate depth of information and to provide opportunities to cross-check results. This study collected documentary data, including Faculty, university and

individual professional documents related to publication. In addition, data was collected via semi structured interviews.

Documents

Documents were collected to provide contextual information, and to verify and clarify graduate and supervisor interview data. Documents collected were:

- The Faculty research centre's training calendars, and email promotions of all forms of assistance related to HDR student publications (2008-2011)
- The university research student centre training and event programs (2008-2011)
- Graduate students' publication CVs and graduate publication lists sourced from the university's electronic repository[3]
- 1 supervisor's publication CV and training notes[4]

Faculty and university research centre documents were collected to address questions pertaining to training opportunities available to Education HDR students as they wrote for publication (Research Questions 1, 2 and 3). The publication CVs and publication lists of graduate students were collected to address questions pertaining to support accessed by the graduates, and the development of expertise (Research Questions 1, 3, and 4).

Semi structured Interviews

The six Education HDR graduates and the two HDR supervisors all participated in semi structured interviews. Semi structured interviews allowed me to keep interview conversations pertinent to the research questions, to gather equivalent information

[3] Graduate publication CVs were requested from all students however, only two were provided. The remaining graduate publication lists were collected from the university's publically available electronic repository.

[4] Supervisor, Dr James spontaneously provided his publication CV and selected training notes during his interview to support his claims.

from within the two groups of participants (graduates and supervisors), and to ensure that participants had the freedom to make any comments that they thought were relevant to the study (Gillham, 2005). To ensure that all interviews would meet these conditions, two *flexible interview protocols* were designed and tested, one for the graduate interviews, and one for the supervisor interviews (see Appendix A for the Graduate Interview Protocol). Yin (2009) suggests use of such a protocol to ensure issues such as construct validity are met (see also Section 3.4). However, others argue that interviews are a tool for gathering data on participant experiences, and that protocols prevent participants from providing direction to the interview (Seidman, 2006). I undertook these interviews as a novice interviewer. Therefore, a flexible protocol was a useful guide to keep the interviews on track. The protocol ensured that all participants were given the opportunity to speak about the same broad areas, and could also introduce new, but relevant, topics. Thus, the interview protocol guided the direction of the interview without sacrificing participant voice.

The interview protocol included a limited number of *open questions* to initiate conversation without constraining the participants to a particular response. In addition, the protocol included potential *probes*. These probes were used when I suspected that additional relevant information might be provided. The protocol also listed example *supplementary questions*. These questions were asked if a participant did not spontaneously provide information on an area of interest. The use of open questions, probes and supplementary questions were suggested by Gillham (2005).

Graduate interviews questions elicited information on the support accessed by these participants as they wrote for publication as HDR students (Research Questions 1, 2 and 3). In addition, these interviews were used to ascertain the development and writing expertise of the graduates (Research Questions 1 and 4). Open questions

included, “Can we go to the first paper/article that you submitted?” Probes and supplementary questions were guided by participant responses. An example of a probe related to this question was “Can you tell me more about the experience of writing that piece?” Potential supplementary questions included, “Have you ever worked as part of a (writing) team?” (see Appendix B for an example of one graduate interview).

Interviews with the two HDR supervisors provided contextual information about the research environment. Supervisors informed research questions pertaining to the training available to HDR students who write for publication (Research Question 2), on the training accessed by these students (Research Questions 1 and 3), and on the development of HDR student writing expertise (Research Questions 1 and 4). An open question that generated data addressing all of these topics was, “Please describe a recent experience of supporting a student as they wrote for publication.” A potential probe was, “Can you tell me about any difficulties that this particular student may have been experiencing with the writing?” A supplementary question was, “Do you ever work through reviewer comments with students? (see Appendix C for an example supervisor interview). Graduate and supervisor interviews thus provided information on the topic of Education HDR students writing for publication and on the context in which it occurred.

The graduate and supervisor interview protocols allowed an interview length of approximately one hour. Interview length was determined by the depth of participant responses, and by the speed of their speech.

Interviews were held at a time, date, and medium convenient to the participants. At the participants’ request, four graduate interviews were held in my office at the university. One graduate and one supervisor interview were held in the

participants' offices at the university. Two participants were unable to meet with me face-to-face. The first of these participants, a supervisor, requested a phone interview. This interview followed the same format as the face-to-face interviews. Prior to the interview, I considered how this alternate interview method might affect the data collected. The absence of non verbal cues can cause issues such as the tendency to interrupt a participant's flow of speech during natural pauses (Gillham, 2005). During the phone interview I attempted to minimise this tendency by deliberately waiting for a few seconds after the supervisor stopped speaking before commenting, or posing the next question. Perhaps as a result, there are no apparent differences between the face-to-face and the telephone interview transcripts (see Appendix D for an example question and response from the telephone interview). The second participant who could not meet face-to-face was an HDR graduate. This participant was working in a remote and inaccessible location. Face-to-face and telephone interviews were not feasible in this instance and he therefore requested an interview by email.

Prior to the email interview, practical issues related to the medium were considered. Specifically, email questions needed to be rethought as email limits non-verbal cues and immediate checks of understanding; however, too much information might have constrained the participant (Meho, 2006). I therefore initiated the interview by sending the questions from the interview protocol with a brief explanatory comment added to each question. These comments reflected probes, supplementary questions and general clarifications raised during the face-to-face HDR graduate interviews. This method resulted in a condensed interview. It was different to other interviews as there was little introduction of new topics, or elaboration of additional topics. For example, when asked, "Is there anything further

you would like to say?" the email interview provided an evaluation of the support provided. In response to this question, face-to-face and telephone interviews provided new topics, or elaborations on topics discussed earlier in the interview However, the email interview was similar to the other HDR graduate interviews in terms of content and themes (see Appendix E: HDR Graduate Interview Excerpt: Edie.).

The face-to-face and phone interviews were audio recorded and fully transcribed to produce text for analysis. The email interview was analysed as a textual piece.

3.3.5 Data Management

The data gathered for this study included documentary and interview data, specifically:

- Hard and electronic copies of the Faculty research centre's training calendars, and email promotions of all forms of assistance related to HDR student publications (2008-2011)[5]
- Hard and electronic copies of the university research student centre training and event programs (2008-2011)
- Hard copies of graduate participants' publication CVs and hard and electronic copies of graduate publication lists sourced from the university's electronic repository
- Hard copies of one supervisor publication CV and training notes[6]
- Hard and electronic copies of graduate and supervisor interview transcripts.

[5] Data were collected for this period as it spanned the graduates' study period.
[6] Supervisor, Dr James spontaneously provided his publication CV and selected training materials.

Management of data followed Yin's (2009) guidance. Specifically, all procedures were documented, and all data were maintained in a *case study database*. Case study databases allow researchers to store and organise all data in an accessible form. They are also used to establish and confirm the relationship between data and claims, thus supporting the reliability of the study (Yin, 2009). This study created two case study databases. The first database contains data stored as electronic files. This database is contained in an electronic folder on a university password-protected hard drive to ensure longevity and confidentiality (National Health and Medical Council & Australian Research Council, 2007). All electronic files were originally stored in this database. However, the interview recordings were only stored temporarily. These recordings have been destroyed in compliance with ethical clearance, and were replaced with the full, de-identified interview transcripts. The second case study database was created for the hardcopy documents. All hard copies have been maintained in this database. All hardcopy documents require storage for accessibility, and to conform to ethical guidelines. The hardcopy case study database is currently stored in a locked filing cabinet at the university.

All electronic and hardcopy files will be stored for five years following any publications. This arrangement will meet the requirements of the case study database (Yin, 2009) and will conform to ethical guidelines relating to data storage as described by the Australian code for the responsible conduct of research (National Health and Medical Council & Australian Research Council, 2007). Thus, all data had to be managed in accordance with the tests for quality empirical research as outlined shortly (Section 3.4).

3.3.6 Data Analysis

Four analytical strategies were employed to address the research questions. These strategies were content analysis, thematic analysis, pattern matching and explanation building.

3.3.6.1 Content Analysis

This study required information on the context in which Education HDR students write for publication, and needed to address research questions related to training opportunities available and accessed by such students (Research Questions 2 and 3). As the study is theory-based all documents and all interview transcripts were subjected to content analysis. There were two steps in content analysis. The steps were (1) initial coding of data, and (2) directed content analysis. First, all data regarding training opportunities were coded consistent with the data source. Such coding of data is a useful way of gleaning relevant information and reducing the volume of material to a manageable level (Krippendorff, 1980). Codes render a number of items with common qualities into a single category. This initial coding resulted in six classes, or types of research training opportunity being created. Second, directed content analysis was then applied. Directed content analysis required further coding determined by theory (Hsieh & Shannon, 2005). Each class was further coded using community of practice theory (Lave & Wenger, 1991; Wenger, 1998) to determine and define coding categories. The categories were 'community of practice' and 'other.' A learning opportunity was coded 'community of practice' if it met three criteria consistent with Lave and Wenger's (Lave & Wenger, 1991; Wenger, 1998) community of practice. These are (1) the development and sharing of useful skills and tools as (2) people of varying levels of expertise work together towards a common goal, within (3) the context of a working

relationship. The results of the directed content analysis are presented and discussed in Section 4.3.

3.3.6.2 Thematic Analysis

Further information on training opportunities accessed by Education HDR students writing for publication was required by the study (Research Questions 3 and 4). Therefore, thematic analysis of graduate and supervisor interviews was undertaken. Thematic analysis allows researchers to make and share meaning from data. Seidman's (2006) procedures for thematic analysis were followed. Three steps were undertaken. These steps were (1) reading, (2) labelling, and (2) sorting. First, each interview transcript was read in its entirety. Second, the transcripts were read again and during this reading, relevant passages related to HDR student access to training opportunities were highlighted. These excerpts were removed from the whole and labelled by topic. Third, labels and the excerpts were further sorted into similar categories. This third step was repeated until themes emerged. It was anticipated that etic themes, arising from participant interviews, and emic themes, arising from the conceptual framework, and present in the literature review, would be revealed. However, all themes were consistent with the conceptual framework. Thematic analysis provided a product that was interpreted for potential readers. The results of thematic analysis are provided in Section 4.4.

3.3.6.3 Pattern Matching

To provide further information on how Education HDR students develop expertise in the domain of writing for publication, all interview transcripts were subjected to pattern matching (Research Question 4). Pattern matching is an analytical process that tests for relationships between theory and data (Yin, 2009). It involved five steps. The steps undertaken were (1) comparison of graduate transcripts to the Model

of Domain Learning (MDL) (Alexander, 2003, 2004); (2) forming units of analysis; (3) comparing the units of analysis to the training opportunities accessed; (4) supplementing the results with data drawn from the supervisor interviews; and (5) forming an argument based on data and theory that linked the graduates' current phases of expertise to the learning opportunities that they had accessed.

The first step of pattern matching was comparison of graduate case transcripts to the Model of Domain Learning (MDL) (Alexander, 2003, 2004) (see Table 2.1 for an illustration of the phases and components of the MDL). This comparison was a highly iterative process, requiring frequent rereads of initial assessments as newer cases were analysed. An example of 'interest,' one of the three components of the MDL, followed by an explanation of how this excerpt was assigned to a phase of the MDL is provided below.

> So those conferences in the early days I used to come back on a huge buzz and feel *extremely motivated to try and write more because of being involved and immersed in that community* [emphasis added]... Because you get the conference proceedings and you start madly reading and *the more you read articles the more you think about writing, and you've got to read to write and you've got to write to read* [emphasis added] (Zara, interview).

Zara's interest in writing for publication during her early writing experiences appears to have been situational. It was dependent on the experience of attending a conference. A situational interest is a characteristic of a learner in the phase of Acclimation (Alexander, 2003, 2004). Therefore, I ascribed Zara's interest at the time she attended this conference as belonging to the phase of Acclimation. Using the same process I compared Zara's learning strategies and knowledge to the MDL

and found that at the point she described she was likely to have been in the phase of Acclimation.

The second step of pattern matching was forming units of analysis. Cases were analysed and reported by unit of analysis. The units of analysis were:

- individual cases who fit within each phase (Acclimation or Competence), and
- all cases.

An individual unit of analysis provided a way of investigating the various experiences of each graduate and comparing the cases to examine the impact of writing for publication experiences and how expertise developed. The collective unit of analysis looked for commonalities across all graduates who had submitted work for publication.

The third step of pattern matching was comparing the units of analysis to the training opportunities accessed by the HDR graduates to ascertain the impact of the training opportunities on the development of expertise in the domain of writing for publication. This step thus built upon the thematic analysis described earlier.

The fourth step of pattern matching was supplementing results with supervisor interview data. Graduate data regarding the training opportunities accessed were compared to data from the supervisor interviews to ascertain areas of consistency and inconsistency. These areas were further theorised during explanation building which is discussed shortly.

The fifth and final step of pattern matching was development of an argument. Units of analysis, were compared to the training opportunities accessed by these HDR graduates. The arguments pertinent to research training are presented in Chapters 4 and 6. The arguments pertinent to research training and the development

of writing expertise are presented in Chapters 4 and 5 respectively. Both arguments are revisited in Chapter 6.

3.3.6.4 Explanation Building

Explanation building was used to identify causal links within data on the training accessed by Education HDR graduates and the development of their writing expertise. Theory suggests that students who develop some expertise may have greater access to communities of practice than other students (Lave & Wenger, 1991; Wenger, 1998). It also suggests that communities of practice may engage in some practices that marginalise or exclude (Lea, 2005; Tusting, 2005), and that conditions inherent in an environment may impact on the effectiveness of communities of practice that operate within these environments (Kerno, 2008) (see Section 2.7.2). Specifically, explanations were sought for why some graduates remained in the phase of Acclimation, while others progressed to the phase of Competence. Explanations on these differences have been provided in Chapters 5 and 6.

3.4 STRATEGIES FOR A RIGOROUS STUDY AND ETHICAL CONSIDERATIONS

This part details steps taken to establish and maintain the rigour of the investigation (Section 3.4.1) and the ethical considerations (Section 3.4.2).

3.4.1 Rigour

To ensure rigour of the case study, Yin (1998, 2009) proposes a number of strategies to meet the four tests of empirical social research. The tests proposed are construct validity, internal validity, external validity and reliability. *Construct validity* is confidence that what is said to be investigated is investigated. Use of multiple sources of evidence, maintaining and reporting a chain of evidence in the case study database, and having key participants check the case study report established and

maintained the construct validity of this study (see also Sections 3.3.3 and 3.3.5). *Internal validity* is the likelihood that cause can be effectively attributed. It is important to a study such as this one, where an explanation is being sought or argued. Within the data analysis stage of this study, pattern matching strategies enabled the production of claims and identification of relationships (see also Section 3.3.6). *External validity* is the extent to which a researcher is able to argue that findings can be generalised to a larger world. It was established by the use of analytic generalisability whereby explanation building used replication logic whereby similar cases that yielded similar results demonstrated literal replication. However, cases yielding contrasting results were explained by theoretical replication. In these instances, the MDL (Alexander, 2003, 2004) and community of practice theory (Lave & Wenger, 1991; Wenger, 1998) were used to explain the differences between cases (see also Section 3.3.6). Finally, *reliability* refers to an absence of errors and biases in the study such that another researcher could perform a similar study with different participants and reach the consistent conclusions (Yin, 2011). The use of a case study protocol including clear documentation of all research procedures and the establishment of a case study database maintained reliability and could potentially serve as a guide for a similar study to be conducted (see also Section 3.3.5).

3.4.2 Ethics

To ensure ethical conduct, this research adhered to the four principles of research outlined in the National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, Australian Research Council, & Australian Vice-Chancellors' Committee, 2007). These are research merit and integrity, justice, beneficence and respect.

Research merit and integrity informed the design and conduct of research, ensuring that a contribution to knowledge could be made without undue harm to participants. This research project was grounded in the literature and carefully designed so that it could address the stated research questions. To ensure accuracy of data collection, participants were given the opportunity to review their interview transcripts and make corrections. In addition, where ambiguity in the transcripts arose, participants were contacted and questioned to provide clarity. (Yin, 2009). The research will be disseminated in academic publications, and thus, contribute to knowledge (Bibby, 1997). Attention to the principle of research merit and integrity ensures that the potential contributions of this research outweigh any costs.

Justice ensures research does not place any undue burden on participants. This particular study had the risk of creating such a burden because it was conducted by the employee of the Faculty research centre which has responsibility for the collection and reporting of student publication data. A senior administrator of the Faculty is my employer, and my research supervisor. This could have created the impression among potential participants that participation, or lack of participation in the project would have an impact on future research support available to them from the research centre. Following Yin's (2011) advice regarding such insider research, and to meet the principle of justice, all potential participants were fully informed of this situation (see Appendix F for the Graduate Recruitment Flyer). Students and supervisors were assured that they would suffer no disadvantage regardless of their decision to participate. Consent was thus informed and voluntary. Ensuring the principle of justice was met avoided exploitation or intimidation of any potential participant in this research.

Beneficence ensures that any risk of harm to participants does not outweigh the potential benefit to participants or to the community. Participant well being was always prioritised. This research met the principle of beneficence by clearly disclosing any likely risks and benefits to participants and by minimising the risk of harm. The only such risk identified was participant inconvenience due to interview time and schedule. To reduce this risk, participants were advised on interview length and were given a choice of interview time and date, and venue. As noted above, two participants requested alternative interview formats, and these requests were accommodated (see Section 3.3.3). Any inconvenience experienced by participants was thus minimised, and is likely to be outweighed by potential benefits of the research. This research should benefit the community of scholars under investigation by informing that community about how to better serve its members (Sieber, 2009). Adhering to the principle of beneficence balances any risks against benefits to participants and the wider community and justified the conduct of this research project.

Respect demands that the needs of participants regarding privacy and the confidential treatment of personal data were met. Privacy needs were met initially by using email recruitment. A Faculty administrator not directly involved in the project emailed all potential participants. Potential participants were told of the broad topic under investigation and were given some indication of likely questions prior to seeking consent (see Appendix F for the Graduate Recruitment Flyer). This process was designed to be minimally intrusive, and ensured that privacy was maintained. Once participant consent was gained, interviews were conducted in a quiet, protected location, so that participants did not feel obliged to respond in a particular manner.

Particular care was taken to ensure confidentiality was maintained. As noted above, the supervisor for this project is a senior Faculty administrator. At times, specific participant responses were disclosed to my supervisor. To protect participant privacy, I used pseudonyms wherever possible. To further prevent compromising participant privacy, any details that might reveal participant identity were removed from the case study database, and will not be shared in publications, shared datasets, and related metadata (Sieber, 2009). Where participants mentioned names of people, places, or publications that might identify them, the identifying information was replaced in the transcript with a general description enclosed by square brackets. For example: [my supervisor]. This practice was adjusted in one instance where one of the supervisors requested that pseudonyms be used for his students and colleagues. In addition, participants were offered the choice of reading and providing corrections to their interview transcripts. Three graduate participants accepted this invitation, and several minor alterations were made to one transcript, where the participant felt that the details provided might identify her. In addition, one graduate requested that details of her qualifications not be linked to her pseudonym to reduce the likelihood of identification. These requests were accommodated. The principle of respect ensured that participants could confidently take part in the project, knowing that their personal privacy was respected and that data would be kept confidential. The need for confidentially was met by storing data securely and by using pseudonyms for all reporting.

Consideration of research merit, justice, beneficence, and respect avoids harm to the participants, maximises benefit to the community under investigation, and ensures any knowledge created is shared. Ethical clearance was sought and granted

by the university's Human Research Ethics Committee before proceeding with the project. The approval number is 1100001431.

3.5 CHAPTER SUMMARY

This study aims to examine Education HDR student writing for publication within the context of a Faculty of education. The study sought to find a link between Education HDR student publication and membership of communities of practice. The study also sought to describe and explain how communities of practice operate within the Faculty. A multiple, explanatory case study design was chosen (Yin, 2009). Case study is ideal for a contextualised issue and is also a rigorous empirical method suitable for the testing and development of theory.

Documentary evidence and interview data were collected. Interviews were guided by a research protocol allowing graduate and supervisor participants to contribute to the shape of the interview. Documents collected included university and Faculty research office programs of events facilitated to support HDR student scholarly writing and publication lists of the six graduates selected as cases. All data was managed with a case study database. Data analysis was directed to address the research questions and included content analysis, thematic analysis, pattern matching and culminated in explanation building. Table 3.2 illustrates the Research Questions, the data collected and the method of analysis applied to address each question.

Table 3.2.

Research Questions and Data Analysis

Step	Research Question		Data	Analysis
1	(2)	What training opportunities were available to Education HDR students writing for publication?	Documents Graduate interviews Supervisor interviews	Content analysis
2	(3)	Which training opportunities did Education HDR students access as they wrote for publication?	Graduate interviews Supervisor interviews	Thematic analysis
3	(4)	How did Education HDR students develop expertise in the domain of writing for publication?	Graduate interviews Supervisor interviews	Pattern matching
4	(1)	How are some Education HDR students able to write for publication during their candidature?	Documents Graduate interviews Supervisor interviews	Explanation building

This research was guided by ethical principles and the tests of empirical research. Therefore any claims can be made with relative confidence. The design of the research thus allows a contribution to theory as well as a contribution to knowledge.

Chapter 4: Results and Discussion: Community of Practice

4.1 INTRODUCTION

This research examines the experiences of Education HDR graduates who wrote for publication during their candidacy. This chapter reports on the training opportunities that were available to Education HDR graduates who wrote for publication (Research Question 2) and the training opportunities they accessed (Research Question 3).

The chapter has three further parts. The following part of the chapter overviews the key elements of a community of practice (Section 4.2). It then provides the research training context (Section 4.3). The next part provides case data and themes drawn from community of practice theory (Section 4.4). The final part provides a chapter summary (Section 4.5).

4.2 ELEMENTS OF A COMMUNITY OF PRACTICE

Recall that any community must meet three criteria before it can be identified as a community of practice (Lave & Wenger, 1991; Wenger, 1998). The criteria are (1) the development and sharing of useful skills and tools as (2) people of varying levels of expertise work together towards a common goal, within (3) the context of a working relationship (see Section 2.7.2). The contextual data was examined for each of these three criteria to determine whether or not a training opportunity was a community of practice. It was also used to assess the training opportunities accessed by the HDR graduate participants.

4.3 CONTEXT: TRAINING OPPORTUNITIES AVAILABLE TO HDR STUDENTS

This Section presents the data pertinent to Research Question 2: *What training opportunities were available to Education HDR students writing for publication?* The research training context was determined by a two-step content analysis. The first step was to explore training opportunities available to Education HDR students that were relevant to the topic of writing for publication. Six categories emerged from the data: (1) *financial support*, a variety of schemes available to assist current HDR students with the costs of publishing; (2) *broadcasts*, information provided by one or a few experts to a broad audience with little opportunity for interaction (e.g. a message sent to the HDR student email list); (3) *workshops*, support sessions facilitated by experienced writers focussed on the development of a specific skill; (4) *events*, a collection of themed sessions that were promoted as a whole; (5) *groups*, facilitated groups with an interest in writing and publication and organised by individuals in the Faculty, or by the research centre; and (6) *supervisor support*, co-authoring or assistance with writing for publication provided by supervisors. The second step was to apply defined content analysis whereby each category of training opportunity was compared to community of practice theory. Potential communities of practice were identified by checking each category of training opportunity for the three criteria outlined in Section 4.2. The analysis revealed that a variety of training opportunities were available for students who wished to write for publication in the years 2008-2011. Of the six types of support provided, only writing groups and supervisor support met all three community of practice criteria (Table 4.1).

Table 4.1.

Training Opportunities

	financial support	broadcasts	workshops	events	groups	supervisor support
Skills and tools developed		x	x	x	x	x
Novice and expert share common goal		x	x	x	x	x
Working relationships					x	x

4.4 CASES: TRAINING OPPORTUNITIES ACCESSED BY HDR STUDENTS

This Section presents the results pertinent to Research Question 3: *Which training opportunities did Education HDR students access as they wrote for publication?* It outlines how writing skills and tools were developed and shared within communities of practice and event attendance (Section 4.4.1); provides evidence of experts and novices working on a common goal (Section 4.4.2); and gives examples of working relationships (Section 4.4.3).

4.4.1 Development and Sharing of Skills and Tools

Graduate Perspectives

Master's and Doctoral graduates reported two broad categories of skills and tools developed within their respective communities of practice. These were (1) writing skills related to the application of academic genre and (2) writing processes related to being a writer. In addition, three graduates reported that they benefitted from workshops and events. Examples of each of these supports for writing follows.

1. Writing skills

Graduates reported that writing skills related to various academic genres were shared by expert writers within communities of practice. For example, Masters and PhD graduate, Zara reported that she learned the technicalities of writing while attending a supervisor-facilitated academic writing group. She listed some of the skills discussed by this group, and touched on the activities offered.

> We looked at topic sentences, POP (point of paragraph) sentences. We looked at a book, that academic writing book[7]. We reviewed that, and we started to review other people's work... So even though I still think I suck at writing big time ... I think now I know the technicalities of writing (Zara, interview).

Zara described explicit instruction in grammar that occurred during these sessions, as well as use of a text book on academic writing skills. The group also practiced using writing skills via peer-review.

Zara's recount indicated that instruction and opportunities to practice skills were given to a number of students at one time. Other students reported receiving individual advice from expert writers as they encountered challenges with writing skills. For example, PhD graduate, Emily was provided one-on-one assistance to find a suitable focus for a journal article.

[7] Zara refers to Johnson, A. (2003). *A short guide to academic writing*. Lanham, MD: University Press of America.

> It's difficult to work out what to take out of your thesis to publish – and we do get help with that ... but getting down to what you actually include, for example, I had four cases in my research and *I didn't know whether you could write a paper about all four cases because they are different, because the focus of a journal article has to be quite narrow, hasn't it* [emphasis added]. So it was really hard negotiating that, but my supervisors really helped me with that (Emily, interview).

Translating research from the genre of thesis to the genre of journal article was difficult for Emily, even though she possibly already understood that the narrow focus of a journal article was a key difference. Had Emily not received this individual assistance with genre, she may not have been able to successfully complete her article. Thus, the data revealed that in one-on-one situations or in groups, graduate students were provided the opportunities to develop the writing skills they needed to successfully write for publication.

2. Writing processes

In addition to providing instruction on the skills of writing, experts within communities of practice also provided student writers with skills related to the processes of writing and publication. For example, PhD graduate, Amanda reported that her supervisor demonstrated how she approached writing for publication as they worked together on a conference paper.

> It was *a good opportunity to see how our supervisor worked – her process* [emphasis added] ... to see that she went through the same types of problems at a, not as much as we did, but that she didn't get it right the first time either, that even her work she revised and revised and revised a lot. But also to learn how to work within a very strict [timeline] – we had a very tight deadline that we needed to meet, so how to balance that – getting it to the quality you want and revising that but getting it on time [*sic*] (Amanda, interview).

Writing with her supervisor, Amanda learned about the processes of revision, meeting deadlines, and ensuring quality. Amanda's experience suggests that unlike assistance with language features, which tended to be in the form of explicit instruction, graduates seem to have learned about the processes of writing as they worked alongside the expert writers on an authentic product, such as a conference paper.

Amanda was not the only graduate who learnt about writing processes by working with an expert writer within a community of practice. Zara revealed a similar learning experience as she reflected on a time when she co-authored a conference paper with her supervisor. Zara stated, "so that was my first experience of realising the rewriting, the rewriting, the playing with, the extending, the getting ideas down first and building ..." (Zara, interview). Like Amanda, Zara became familiar with writing processes as she worked with an expert writer. The graduates agreed that they learnt the processes of writing as they worked with expert writers to complete writing projects. The wholistic process of completing an authentic product contrasted to the explicit instruction reported as useful for learning writing skills.

All graduates reported learning writing skills and processes within communities of practice. In addition, some graduates spoke about learning about

writing for publication by attending events. For example, Amanda relayed an experience of attending a writing retreat.

> It was really good with that retreat to have little groups where we discussed what papers we were working on and because I was an HDR student and not a staff member, the staff members were really encouraging, helpful and the leader of the little group that I was in, in particular gave me a lot of useful suggestions and things to think about. And then, so I made adjustments throughout the retreat and then *came back to one of my supervisors at the end of it to sort of get the final ok* [emphasis added] (Amanda, interview).

Suggestions and comments from more experienced writers at the writing retreat allowed Amanda to improve her writing and her paper. Notably, Amanda benefitted from the retreat as a competent writer. She was already able to assess her learning needs and make strategic choices regarding training opportunities. Also, Amanda's supervisor was involved with the production of the paper, albeit in a small way. The benefit Amanda received from the retreat as an experienced writer, and the impact of the supplementary support of her supervisor will be elaborated later (see Section 5.3.2).

Supervisor Perspectives

Supervisors also provided accounts of sharing writing skills and conceptual tools. The supervisors' stories indicated that writing skills, such as the use of appropriate language features, are offered through explicit instruction. They indicated that writing processes, such as addressing reviewer comments are offered through both explicit instruction, and by example. Dr James told about co-authoring a peer-review article with a student writer.

> She [the student] followed through very clearly *the directions I provided* [emphasis added] when it came up to, let's say, how do you submit an article to a journal, looking at the specifications, the requirements of that journal, the level of complexities that occur within the journal and to ensure that it is in keeping with that quality and the standards that the journal expects. So *providing those sorts of ideas in the first place*, [emphasis added] but also *showing her how to go through the reviewing processes*, [emphasis added] expecting reviews to come back and that it is a very rare document that comes back without a comment and saying it's ready for publication (Dr James, interview).

Dr James explicitly offered writing skills by providing directions regarding genre, including specifications, requirements and complexities of the specific journal they were targeting. His directions encompassed the writing processes of journal submission, and also finding and following journal specifications. Dr James also spoke about showing his student how to negotiate some of the processes of writing, specifically the peer-review process.

Beyond the provision of writing skills and tools, supervisors also told of how they structured writing support according to the perceived needs of the students. This included referring them to further communities of practice.

> The international student I was talking about, he used the support indirectly to write the paper because that support was used to get the thesis together – very much so. He was actually attending [a professional staff member's] academic writing groups every week. And that was because both myself [*sic*] and the other supervisor insisted on that as a strategy... It was so critical to just systematically develop his academic writing skills over the whole of his thesis writing which then, of course, contributed to the publication because we were using the thesis to write the paper (Dr Fiona, interview).

Dr Fiona and her co-supervisor decided that their student would benefit from academic writing skills and supported his development by insisting that he attend additional academic writing support. Fiona's student, Edie later supported her statement when he claimed that, "the level of support I received from all the staff at [the research centre] prior to this paid off in the final version of the ...article" (Edie, interview). These supervisors thus provided explicit instruction in genre and writing processes such as journal submission and attending to reviewers' comments. They also modelled writing processes as they worked with their student. They also guided their student towards other appropriate forms of writing support.

Discussion: Tools and skills shared and developed

The tools shared by expert writers within communities of practice and during events were writing skills and writing processes. Writing skills provided the graduates with an understanding of how they were to write. Graduates and supervisors agreed that one way these skills were addressed was by explicit instruction. Explicit instruction of writing skills is frequently provided as a key component of a successful writing intervention (Cuthbert, et al., 2009; Lassig, et al., 2009; Lee & Kamler, 2008; Morss & Murray, 2001; Mullen, 2001; Nolan & Rocco, 2009; Paré, 2010). It appears that

expert writers within communities of practice provided such instruction to the HDR graduates.

Writing processes inform how writing for publication might be accomplished. Graduate participants claimed to have learnt these processes by working with the expert writers. However, supervisor accounts suggested that explicit instruction may also have been provided. Therefore, expert writers may have given some instruction to the HDR graduates as they wrote together. This instruction may have been sufficient assistance to allow the HDR graduates to successfully negotiate the various processes of writing. Graduate and supervisor accounts of how skills and processes of writing were shared suggests that the ZPD (Vygotsky, 1986) may have been effectively utilised in the teaching and learning processes related to writing. That is, some assistance with their writing enabled them to function in a more expert role than they may have been able to independently perform.

4.4.2 Expert and Novice Working Together on a Common Goal

Graduate Perspectives

HDR graduate stories revealed two broad roles, corresponding to community of practice theory (Lave & Wenger, 1991; Wenger, 1998). These roles were (1) an initial peripheral role in which students new to writing for publication were led by an expert writer or (2) a central role in which the more experienced student writers initiated and led the writing, drawing upon the support of expert writers as needed.

1. Peripheral roles

As novice writers, graduates worked in peripheral roles, with a more central, directive role played by expert writers. Zara told how the experts within her community of practice directed her first publication.

> When I first started writing *it was because my supervisors encouraged me to.* [emphasis added] And they said it [the manuscript] really could be part of the PhD, or the Masters, and I had no idea, I was like a lamb to the slaughter I think, you know the first experience, *I had absolutely no idea what I was doing* [emphasis added] (Zara, interview).

Zara claimed that at this point she was a novice writer, with no idea about writing for publication. Her first publication was initiated by her supervisors. At that point, the supervisors had the central, directive role in the writing of the paper. One of Zara's supervisors then assisted her as they wrote the paper together.

> We did a lot of the structure, you know, what is the abstract? You know, looking at the actual structure of the conference paper. So, I needed a lot of help just on those basics, so that was very good. (Zara, interview).

Zara reaffirmed her status as a novice writer when she stated that she needed a lot of help with writing. She attributed a central, directive role to the supervisor who led Zara through the process of structuring the article. Thus, Zara assumed a relatively peripheral role in the community as she and her supervisor co-authored a conference paper.

2. Central roles

Students with some expertise in writing were likely to share or lead a collaborative writing project developed within a community of practice. Amanda provided an example when she told of a conference paper written by a number of HDR students and their supervisor.

> We had to try to *agree as a group* [emphasis added] what we would focus on and how that work would be split amongst everyone. So, we had talks about authorship and my supervisor used that as an opportunity to talk about how authorship is decided and the sequence of authors and that sort of thing (Amanda, interview).

Amanda provided two indications that the student writers were beginning to fill a more central role in the production of this paper. First, according to Amanda, it was the team that made decisions regarding focus and splitting work rather than the supervisor. Second, although the supervisor shared knowledge about authorship with the rest of the team, it seems the students were already discussing the matter. Amanda's recount suggests that the supervisor did not assume the central role, despite her greater expertise. With guidance, this conference paper was then led by Amanda, with the assistance of her fellow students as co-authors.

> *I was chosen to take the lead role* [emphasis added] in the paper. *We'd written* [emphasis added] little bits as we'd gone along, as a group, as a whole during some of our meetings. So *we took* [emphasis added] parts of that and then *we designed* [emphasis added] a survey that we sent out to all members of that group who sent the data *back to me* ... [emphasis added] (Amanda, interview).

According to Amanda, her supervisor did not directly take part in this stage of the paper's development. Instead, Amanda was chosen to take the central role in the paper's production, and requested data for the paper was returned directly to Amanda. Further evidence that the students were occupying a central role in the writing is demonstrated by Amanda's use of the collective pronoun, 'we'. This pronoun preceded a number of activities the group undertook with guidance rather than the direct involvement of their supervisor. Once the draft was complete, but still

in need of some final work, a meeting with two of the student authors and their supervisor took place.

> When *we were* [emphasis added] coming to the deadline, *two of the members plus my supervisor all sat down together and decided*, '*Ok, we've got everything we need,* [emphasis added] but it's not at the level it needs to be, so how do *we bring it up* [emphasis added]?" And so, that time *we were* [emphasis added] actually writing together– sort of sitting in front of the computer and ... saying things – what would work and what wouldn't ... (Amanda, interview).

Amanda continued to use the collective pronoun 'we' to indicate that the activities undertaken were shared by the three team members including the supervisor. Amanda did not specify who it was that claimed the quality required attention. This blurred the ownership of that statement and indicates that to Amanda at least, it was a consensual agreement, rather than a directive issued by her supervisor. Therefore, it seems that the graduate writers continued to experience a relatively central role in the paper despite the supervisor's guidance of the process. Overall, the graduates reported that they initially learnt in peripheral roles in communities of practice. However, once they had developed some expertise, they continued to learn the skills and processes of writing by participating in more central roles.

Supervisor Perspectives

Supervisors also provided examples of students undertaking both peripheral and more central roles while writing for publication. For example, Dr James indicated that one of his students played an initially peripheral, and then more central role as they co-authored a paper.

> *I would definitely use various mentoring skills and practices to assist her* [emphasis added] in that way, in the first instance it was more, '*let's have a look* [emphasis added] at the potential topics that *you can write on*,' [emphasis added] and trying to then delineate the specific areas that might form particular journal articles or conference papers and with that *I would write in with her* [emphasis added] so *we would basically write together* [emphasis added] at different times to be able to strengthen what is for the publication.... so *we would bounce ideas* [emphasis added] off each other through meetings, face-to-face meetings in those initial times that help *us to unpack* [emphasis added] some of the complicated ideas and then *we would do a lot of work online* [emphasis added] (Dr James, interview).

Dr James directed the work by providing mentoring and assistance however, this story also revealed some sharing of the central role in the writing. Dr James initially invited the student to have a look for topics with him with the phrase, 'let us have a look.' He then suggested that she would be writing on these topics. After stating he would write in with her, Dr James made a switch in the interview to the use of the collective pronouns, 'us' and 'we' indicating that there was an element at least of shared control of the writing. This supervisor's account therefore demonstrated a pattern whereby a novice student writer was initially invited to perform a peripheral role, and then as she gained some expertise, she increasingly achieved a more central role in a shared writing task.

Discussion: Expert and novice working together on a common goal

Education HDR graduates reported playing various roles within their communities of practice as they wrote with expert writers. Peripheral roles were played by students as they first learned about writing for publication. These novice student writers frequently reported being guided through the writing step-by-step as they worked in

this peripheral role. As students gained expertise they played an increasingly central role in the writing. Competent HDR student writers sometimes led teams, and they were involved in decision-making about the writing. Supervisor accounts showed a similar pattern whereby student and supervisor roles accommodated the needs and abilities of the student writers. This pattern aligns to community of practice theory whereby experts and novices play defined roles as they work together on a project. The roles of the novice evolve as expertise develops (Lave & Wenger, 1991; Wenger, 1998). This approach also appears to have allowed the students to progress as writers within an environment that provided strategic, but not excessive support. Such fading of support is an important characteristic of the Zone of Proximal Development whereby the expert provides less assistance as the novice grows in expertise (Vygotsky, 1986).

Hierarchical relationships were previously raised as a context that can adversely affect communities of practice (Kerno, 2008). The supervisor-student relationship is hierarchical and could therefore potentially impact upon a community of practice and make it difficult for a HDR student to request or accept the central role within that community. However, the graduates in this study did not appear affected by the supervisor-student hierarchy in this way.

4.4.3 Working Relationships

Graduate Perspectives

Graduates revealed that working relationships developed as they wrote and published with expert writers. To function effectively, a community of practice requires the presence of such relationships between community members (Lave & Wenger, 1991; Wenger, 1998). For example, Emily referred to the relationship she developed with her supervisors to form a team.

> And it was a very natural process because we are really good in a team. *We'd developed* [emphasis added] our team over a lot of years. And so we *worked very well together* [emphasis added]. So we were able to *do that very amicably* [emphasis added] (Emily, interview).

According to Emily, her publication relationship with her supervisors did not just happen. Emily and her two supervisors developed the relationship over a period of years. Further, Emily stated that her relationship with her supervisors allowed them to work well and amicably together as they wrote for publication.

Graduates revealed that working relationships between student and expert writers shared two characteristics. These were (1) sustained one-on-one contact between student and expert writers, and (2) intensity of support diminishing over time. These characteristics and their impacts are described further below.

1. Sustained one-on-one contact

Working relationships between student and expert writers were initially characterised by regular, close contact. Mark described experiencing sustained contact with his supervisor as they worked on Mark's initial peer-reviewed article. Mark claimed, "I pretty much sat down and thought, 'this is what I have,' and my supervisor and I went, you know, *back and forth*, [emphasis added] we worked from that" (Mark, interview). Mark's supervisor gave feedback and instruction over a period of time as they completed their article. Emily also experienced one-on-one contact over time with an expert writer as she completed a book chapter. Reflecting on this experience, Emily stated, "I just worked with [the book editor,] he did a lot of the editing, he sent the thing back for *revision after revision after revision* [emphasis added] and finally it was ready and it got published" (Emily, interview). Emily and the book editor worked one-on-one during a long period of writing and revision to complete her

chapter. Similarly, other graduates who successfully completed an initial piece for publication all spoke of experiencing support via sustained contact with an expert writer, either a supervisor or editor.

2. Intensity of support diminishing over time

The HDR graduate interviews indicated that some relationships between novice and expert writers diminished over time. For instance, Genny claimed that her supervisors initially supported her writing.

> I: Were you given any sort of support to do those in any sense?
>
> G: From my supervisors, yes definitely. My supervisors were brilliant (Genny interview).

Genny also reported that this support has since ceased.

> I: So have you got any support at the moment?
>
> G: No, not now.
>
> I: You've finished your studies and you've got no support with your writing. Is that right?
>
> G: *No, not now* [emphasis added]. I guess I am writing with a few other people at the moment, but then again, they are all really busy too, so I might do my bit, or they might do their bit, but *to get together is really difficult* [emphasis added] because everybody is so busy. You know, the priority for writing is high, but when you look at your workload, you think, *"I'll just do that whenever"* [emphasis added] (Genny, interview).

Genny's working relationship with her supervisors appears to have ended when she completed her thesis and she is now working with other writers. Genny did not pinpoint the moment when her relationship with her supervisors diminished. However, her story indicates that student-supervisor working relationships do not last indefinitely. While some of these relationships may transition to working as colleagues, other relationships do not continue.

Genny's story also points to a potential consequence of relationships ending before the novice writer is ready to author a manuscript without the support of a community of practice. Genny twice claimed that she had no more expert support – although she is working with other writers. A lack of such support is also implied by her use of the phrases "my bit" and "their bit." In this comment, Genny appeared to indicate that although contributions as bits of text were being provided, face-to-face communication and feedback that might support her writing was not happening, as it was difficult to get together. This may have impacted on Genny's reduced commitment to her writing, indicated by her resigned statement that she will just do it 'whenever.' In addition to being stalled in her writing, Genny demonstrated qualities indicating that she remained a relatively novice writer. This included a dependence on others to support her writing. Genny clearly stated that it was difficult for her to work without easy access to and feedback from her co-authors. Graduates who experienced working relationships that ended before they became competent writers appeared to receive limited benefit from membership of their communities of practice. They did produce work for publication; however, the development of their expertise appears to have been limited (see also Section 2.7.1 re the phase of Acclimation).

Compared to Genny, graduates in longer term working relationships reported greater benefit from membership of a community of practice. Emily was one graduate who wrote several papers within the one community of practice, and benefitted from this community. Emily co-authored these papers with a research team that included one of her supervisors and a number of other academics. The first paper did not demand a lot from Emily, and she did not mention any specific learning.

E: No, I think we all just got a chance to read through and amend and just kinda [sic] thing, I wasn't one of the primary writers.

I: Oh, ok, so by the time you did your work on it, it was already drafted.

E: Yeah.

I: So how was that experience different? Was it easier for you?

E: Well, yes, of course, you don't have to shape it and do all the finicky stuff (Emily, interview).

It appears that Emily merely edited or proofed this initial paper. However, she possibly gained some experience with the processes of writing as a team member. Regarding a later paper co-authored with the same team, Emily reported that she experienced a leading role while continuing to be supported by this community.

> And one of them [a paper] I did, I had a key role in. I actually wrote the paper and they gave me feedback, so that was a very different experience – being first author in a group is a very different experience to being last author in a group. And so that one, I was really driving and working in a team in that sense is interesting because you have a lot more challenges, and I think that you also have the *benefit of having a lot more experienced people all around you to help you* [emphasis added] (Emily, interview).

This later paper provided Emily with writing experience, review from peers within the team, and the challenge of team leadership. While taking on these challenges, Emily benefitted from being able to draw on the skills of the team as needed. As a consequence, this particular paper was submitted to a journal and eventually published. Emily's experience of progression from novice to more competent writer within the one working relationship may also have enabled her to develop the qualities of a competent writer, including being able to assess her level of knowledge and access support for these gaps. Relationships that existed over the course of

several publications seemed to benefit students, such as Emily, by creating increased numbers of publications, and perhaps more importantly, engaging in opportunities to increase writing expertise. Short-term writing relationships, such as Genny's relationship with her supervisors did not appear to provide the same support for the development of writing expertise.

Supervisor Perspectives

Supervisors spoke of working relationships developed with student writers; however, their recounts had a different focus from the completion of articles mentioned by graduates. Speaking generally about writing with HDR students, Dr James indicated that the student-supervisor relationship was part of a much larger picture.

> So basically I look at it very much as *partnerships, collaborations, being collaborative with the research* [emphasis added] itself and also looking at, because a lot of our HDR student are international, I see this very much as an *international collaboration* [emphasis added] too. So it puts *links in with other countries and other universities* [emphasis added] and there can then be quite advantageous positions for [the university] to be able to *forge a new relationship with a country, or with a university* [emphasis added] and therefore it helps *to promote that knowledge growth and knowledge transfer* [emphasis added] and *help the university* [emphasis added] at the same time (Dr James, interview).

Here, Dr James didn't describe a relationship with an individual student or for the purpose of writing an article, instead he spoke of collaborations that had the potential to become relationships between universities, or even between countries. He also spoke of advantages of co-authorship including promotion of knowledge, and hinted at a strategic benefit for the university. Thus, Dr James had a much broader view of

relationships than that indicated by the graduate recounts which focussed solely on the benefit to individuals.

Dr Fiona also described a broad view of relationships, focussing on the student's work community, teacher education in the student's country, and the student as an individual.

> One student that I am thinking of, who was an international student, the role that his paper was going to play in his everyday work environment and how he was going to have an impact on teacher education in his context was really significant [emphasis added] and it was going to be supported by getting this paper out and published. And then it was going to support him in potentially getting a PhD scholarship [emphasis added] down the track (Dr Fiona, interview).

Like Dr James, Dr Fiona was thinking about the relationship with her student in terms of promoting new knowledge, albeit in an applied setting. For her, the relationship with a particular student seems to include the teacher education community in that student's home country. Similar to the graduates, however, Dr Fiona also thought of the relationship as being between individuals. This was indicated by her wanting to support a particular student to gain a scholarship. Thus, for supervisors, working relationships are a link to broad professional communities, opportunities for future collaborations, pathways for the transfer of skills and knowledge, and a connection between individuals.

Discussion: Relationships

Graduates reported that the working relationships they experienced were characterised by initial periods of close contact during which a paper was completed. This close contact was the context for the sharing of writing skills and processes.

Eventually however, working relationships either ended, or matured into collegial relationships whereby graduates enjoyed the experience of increased control of their writing projects while continuing to draw on the support of expert writers. These graduates tended to become more self-sufficient as writers. Students in shorter-lived relationships experienced difficulty or disinterest in attempting to write again. Therefore, communities of practice may need to operate over sustained periods of time in order to effectively support the development of writing skills and practices.

Time pressures have been identified elsewhere as being problematic to the effective functioning of communities of practice (Kerno, 2008). However, this study and multiple studies of the development of academic writing reported elsewhere indicate that sustained periods of time are important for the development of skills and the relationships and communities that foster these skills (Aitchison, 2010; Caffarella & Barnett, 2000; Nolan & Rocco, 2009; Paré, 2010). Therefore, sustained support over time appears to be needed to boost publication numbers and Education HDR student writing expertise.

Supervisors presented a slightly different view of relationships to that described by the HDR graduates. Some concern for relationships with individual graduates was demonstrated, for example, by Dr Fiona who considered how her student's competitiveness as a candidate for a PhD scholarship would be strengthened by a peer-reviewed publication. However, supervisors also indicated that relationships are a link to the graduates' professional communities, and a conduit for knowledge transfer and collaboration.

4.5 CHAPTER SUMMARY

Analysis of Education HDR graduate and supervisor interviews indicates that the graduates who wrote for publication accessed at least one community of practice as

they learned the skills and processes of writing for publication. Further, graduates appeared to benefit from all of the three elements of a community of practice. They reported (1) development of their writing skills and processes; (2) working with expert writers on a common project that provided a meaningful site for learning; and (3) engaging with more expert writers in relationships that provided the context for the production of writing and the development of writing skills and processes.

Chapter 5: Results and Discussion: Model of Domain Learning

5.1 INTRODUCTION

This Chapter presents and discusses the results related to how students develop expertise in writing for publication (Research Question 4). The Chapter has three further parts. The following part presents the graduate interview data and themes drawn from the Model of Domain Learning (Alexander, 2003, 2004). It describes support accessed by Education HDR students during the phase of Acclimation, or initial contact with the field, (Section 5.2); and the phase of Competence, or developing mastery, (Section 5.3). It also comments on HDR students and the phase of Proficiency, in which new knowledge is generated and shared with others (Section 5.4). Supplementary data drawn from supervisor interviews is also provided (Section 5.5). The final part provides the Chapter summary (Section 5.6).

5.2 ACCLIMATION

This part presents results related to the graduates' initial experiences of writing for publication. Descriptions and support that developed graduate interest (Section 5.2.1), strategies for learning (Section 5.2.2), and knowledge (Section 5.2.3) are presented. A summary is also provided (Section 5.2.4).

5.2.1 Interest

In Acclimation, learners are coming into contact with a domain of interest for the first time. Learners in the phase of Acclimation initially rely upon situational interest to sustain learning (Alexander, 2003, 2004). The theory suggests that HDR students who are new to writing for publication would not be interested in writing itself, but

would write to satisfy an interest in an external situation. HDR graduate interviews confirmed that during early experiences with writing for publication, situational interest was a motivator for writing. For instance, PhD graduate, Zara said,

> When I first started writing *it was because my supervisors encouraged me to.* [emphasis added] And they said it really could be part of the PhD, or the Masters. And with the literature review, that paper there supported the literature review. So, *it was very meaningful at the same time – so it had a reason – to link to the PhD* [emphasis added] (Zara, interview).

Here, Zara indicated that she wrote her first conference paper following the encouragement of expert writers within her community of practice. She also discovered a further situational interest in writing for publication, this being that her thesis was strengthened by the additional attention to her literature review.

Situational interest inspired by expert writers

Zara's recount above suggest that her interest in writing for publication was piqued by expert writers. PhD graduate, Mark reported a similar experience to Zara when he spoke about his first publication.

> In hindsight it was very good I did it when I did it because it clarified some thinking for my own conceptual framework and theoretical framework for completing my thesis, but *at the time I didn't quite see the value in it* [emphasis added]. It was more like *my supervisor said, 'You know - you'd better start publishing'* [emphasis added] (Mark, interview).

Like Zara, Mark did not write for publication prior to his supervisor providing the encouragement which created an initial, situational interest.

In addition to supervisors, other experts can create an interest in writing for publication. Emily, another PhD graduate, provided a publication story indicating

that she also became interested in writing due to the influence of an expert writer. Emily accepted an opportunity to write a chapter of an edited book, an invitation extended by senior academics in the Faculty. Emily recalled, "a notice went out, it said that if you wanted to be involved in this book, it's on research [provided book title]. They said, 'Did you want to get in on this?' I said, 'All right'" (Emily, interview). Emily became interested in writing her publication following an invitation by experts within a (potential) community of practice. While new to writing for publication, Zara, Mark, and Emily all relied on experts from their respective communities of practice to foster a situational interest in writing.

5.2.2 Strategies for Learning

In the phase of Acclimation, learners familiarising themselves with a new domain of interest draw upon shallow strategies for learning (Alexander, 2003, 2004). HDR students new to writing for publication appear to have depended upon expert writers to direct and support their learning in three ways. These were (1) guidance through the processes of writing; (2) explicit instruction in language features; and (3) facilitation and invitation to join communities of practice.

1. Guidance through the processes of writing

HDR graduates reported that they were guided through the process of writing as they worked with expert writers. Zara provided an example when she described how she co-authored her first conference paper with her supervisor.

> *She almost took me through the process of writing a conference paper*, [emphasis added] where we looked at other conference papers, we looked at material from that actual association, what they've done before (Zara, interview).

Thus, Zara's supervisor provided substantial support on her first attempt at a conference paper.

2. Explicit instruction in language features

Graduates also reported receiving explicit instruction in the grammatical aspects of writing. For instance, Mark described what happened after he shared a draft paper with his supervisor.

> My supervisor gave me an *immense amount of instruction* [emphasis added] because the first bit that I had done was in [my first language] way of things where you start somewhere and end up nowhere [laughs]. *She put a lot of structure into it* [emphasis added] (Mark, interview).

Mark claimed that instruction on structure and genre was provided by his supervisor. His light-hearted description of the genre of his first language perhaps indicates an easy familiarity with genre.

3. Facilitation and encouragement to attend further communities of practice

Some expert writers encouraged the novice HDR student writers to participate in communities of practice beyond the one provided by the student-supervisor relationship. For example, PhD graduate, Amanda reported that her supervisor encouraged her to attend a supervisor-facilitated academic writing group. She mentioned the learning that developed between the students in the group.

> One of my supervisors started a writing group for her postgraduate students ... it was a group looking at how to improve academic writing because she was finding that people were usually having similar issues and she was writing similar comments on our feedback. *For us it was a way to get together and talk about writing* [emphasis added]. And then, from ... what started out as ... not formal instruction, *but her leading what topic* [emphasis added] we were going to cover that particular meeting, *we started to put it into practice, these skills that we were learning* [emphasis added] (Amanda, interview).

Amanda described a group where the supervisor led the conversation and the students were able to discuss writing. These activities led to the development and application of writing skills. Amanda was invited to the writing group by her supervisor who was also the group facilitator.

In contrast to the experience of Amanda, other students who appeared to be in the phase of Acclimation did not typically report seeking or receiving help beyond their supervisor within a community of practice. Mark explicitly stated that he accessed only his supervisor for assistance with his first publication.

> I didn't even look – I knew there were writing workshops and writing for publication and how to write journal articles but I could not at the time fit it all in... So I pretty much sat down and thought this is what I have and my supervisor and I went, you know back and forth, we worked from that. *We didn't use any support from [the university] – any editing support or anything like that* [emphasis added] (Mark, interview).

Mark relied entirely on the one expert writer for support with his writing.

The shallow learning styles typical of students who were relatively new to writing for publication, may have prevented them from seeking or benefitting from

support beyond their immediate community of practice. For example, although HDR graduate, Genny attended a writing retreat and writing workshops, regarding writing for publication, her interview transcript demonstrates many features aligned with the phase of Acclimation. Of her experiences beyond the community of practice established with her supervisors, Genny said, "I've attended, you know some of the [Faculty-led] workshops, writing camps, you know all those sorts of things that they offered which I really enjoyed" (Genny, interview). Unlike Amanda who attended a supervisor-facilitated writing group, Genny did not elaborate on the learning experiences, the content presented, or on what she might have learned from these events. This may indicate that Genny retains the shallow learning strategies of Acclimation. Genny's silence on the worth of these experiences, point to the possibility that without the presence of an interested expert from a community of practice, some students in Acclimation may not benefit from support provided by an additional community, such as a Writing Retreat.

5.2.3 Knowledge

In Acclimation, learners work with a fragmented and relatively unstructured knowledge base (Alexander, 2003, 2004). Graduate recounts revealed that knowledge about writing for publication while they were relatively inexperienced in this domain corresponded to Vygotsky's (1986) description of a complex. Ideas about writing were restricted to the concrete, everyday world of the learner, they were disparate in content and level of generalisation, and were linked in functional terms (See also Section 2.7.1). Genny provided an example when she described the peer-review process.

> I really see it as rather *soul destroying* [emphasis added: effect on writers/Genny] and I think you've got people who have got so much to offer but *you can't get it out there* [emphasis added: effect on writers'/Genny's ability to contribute] because *you've got some little person [who] decides that they don't like* [emphasis added: reviewer decision making] the way you've done your theory, or whatever, *and you think, 'Well, what's the use of it really*' [emphasis added: effect on writer's/Genny's evaluation of writing for peer-review] (Genny, interview).

Genny's statement demonstrates three features of a complex (Vygotsky, 1986). First, her thoughts appear to be firmly grounded in the concrete world of her immediate, personal experiences. Although Genny implies a global, rather than a personal statement by using the terms 'people', and 'you,' not 'I,' or 'me, her comments seem disconnected to the experiences of the colleagues she works with, or her former supervisors – all of whom have presumably dealt with the experience of peer-review. Second, in keeping with the definition of a complex, Genny listed the functions of peer-review, including preventing the flow of information. Third, also consistent with a complex, Genny provided a disparate list of ideas associated with peer-review. There is no abstracted element linking all of these unrelated parts into a whole. For example, Genny stated that peer-review has a soul destroying effect on the writer. She then describes the effect on writers' ability to contribute their work, they "can't get it [what they have to offer] out there." Genny then tells of decision making by the reviewer, "some little person who decides... " and concludes with an evaluation of writing for peer- review, "what's the use of it..." Genny's description is also missing elements of a concept (Vygotsky, 1986). Specifically, Genny did not provide an abstraction to link the associated ideas logically. The potential abstraction, 'gatekeeping,' could link the actions of the reviewer, the conventions of the field (use

of theory) and Genny's frustration with her thwarted attempt to contribute to the field. Genny's description of peer-review demonstrates that her thought complexes were not able to be used as adroitly as were fully developed concepts. She did not, for example report that she was able to learn anything from the peer-review process. Instead, Genny's interpretation of her experience of the peer-review process was a destructive, personal attack, one that has damaged her interest in publication to the point where she now questions whether she wants to continue writing for peer reviewed outlets.

Communities of practice were able to make some impact on the knowledge of novice writers. However, graduate recounts appear to confirm Vygotsky's (1986) proposition that concepts are not transferred directly from expert to learner. For example, Mark reported that he received instruction in the genre of English language journals (see Section 5.2.2); however, his description of genre appears to relate to his personal experience as a speaker of English as a second language, as well as to any instruction he received.

> The way journal articles are structured in [my language] is quite different to how they are structured in English. You know ours is more reader-led. So the reader actually picks up what they want to pick up. They are not so led by the writer into certain things... The idea behind it is that the writer is not patronising you – the writer thinks 'ok, the reader is smart enough to understand this, so I am appealing to the intellect of the reader as to where this is going.' So in English it's you know, 'I'm just now telling you what I am about to tell you, then I'm telling you, and then I'm telling you what I've just told you.' (Mark, interview).

Mark, like other students new to writing for publication reported receiving various forms of instruction or guidance within his community of practice, and this instruction appears to have assisted the development of his knowledge of genre.

5.2.4 Summary: Acclimation

A high level of support for learner interest, learning strategies and knowledge appears vital to the success of the HDR graduate writers new to writing for publication. For instance, these learners seem to require that an interesting situation be presented or validated before they would write. Experts within communities of practice sometimes created the situational interest by simply requesting that a student write with them. Building the writing upon situational interest encouraged the students to write, and may have helped sustain them through the writing and publication process. Learning strategies of HDR graduates in this phase also appear to be heavily dependent upon expert writers within a community of practice. Explicit instruction, modelling, and guidance were provided to learners as they tackled writing for publication. In addition, some expert writers provided access to larger or different communities of practice, either by facilitation of groups, or by encouraging students to access writing groups led by other Faculty staff. Knowledge in this phase was fragmented and not necessarily conducive to further learning. It seems that expert writers could stimulate the beginning of conceptual development, however, as predicted by Vygotsky (1986) new knowledge also incorporated the personal experiences of the novice writers.

The need for intense support may impact on the ability of novice writers to access training opportunities. It has been noted that some students do not access research training that may be freely available within the research environment (Boud & Lee, 2005). The apparent dependence of the novice writers across the three components of

interest, learning strategies and knowledge could explain why some HDR students do not engage with supplementary training opportunities, or do not appear to benefit from participation in such events.

5.3 COMPETENCE

The phase of Competence is characterised by transformation in learners' interest, strategies for learning and knowledge in the domain (Alexander, 2003, 2004). This part describes student interest (Section 5.3.1), strategies for learning (Section 5.3.2), and knowledge (Section 5.3.3) about writing for publication and the how the support accessed supported the development of each of these areas. A discussion is also provided (Section 5.3.4).

5.3.1 Interest

According to the MDL, learners in the phase of Competence begin to develop a personal interest in the domain (Alexander, 2003, 2004). Reports of HDR graduates who had written multiple publications and appeared to be working within the phase of Competence indicated a mixture of situational interest and a developing personal interest in writing for publication. Amanda provided one example.

> I'm looking forward to the Write Up Scholarship[8], *I do enjoy writing* [emphasis added] and I really do appreciate the opportunity to get more publications out there because *I know how important it is if you want to stay in the academia game,* [emphasis added] which is something that I am certainly considering (Amanda, interview).

Amanda's enjoyment of writing points to a developing personal interest in the domain. Her lingering situational interest is evidenced by her emphasis on the link

[8] The Write Up scholarship is a three month stipend to allow graduate HDR students to write articles from their thesis.

between publications and career. HDR graduates were supported by experts within communities of practice and they reported benefitting from (1) the support of situational interest, and (2) support of personal interest.

1. Support of situational interest

Students working within the phase of Competence reported that experts within communities of practice continued to support their situational interest in writing for publication. For example, Emily approached her supervisors for support and guidance when she wanted to contribute something to her field.

> I was having a few challenges with the paradigm that I was working in and *I just felt that I needed to contribute these difficulties to the field of literature*. [emphasis added] So, I talked to my supervisors about publishing this discussion paper and they were keen on the idea. And I was actually quite surprised. I thought that they might, because I would be using their name, I thought they probably might be more reluctant to publish with their students, because I just didn't know. I was quite surprised that these very important academics wanted to be associated with me in the literature. *I was very excited about that* [emphasis added] (Emily, interview).

Emily's initial situational interest in writing emerged from a desire to contribute her thoughts on her paradigm to the field. From her supervisors' support, an additional situational interest in writing developed. Emily was now also excited about the prospect of being associated with her supervisors in the literature. Thus, situational interest remained important to competent graduate writers.

2. Support of personal interest

Graduates operating within the phase of Competence reported that their developing personal interest in writing for publication was encouraged by expert writers within

communities of practice. For example, Zara reported that she became excited about the journal selection process while co-authoring with her supervisor.

> When I first sent it out I sent it out to [a journal] which would perhaps be the top journal in the world and my supervisor suggested that I start somewhere a little bit lower and I said 'No, no, I think this would match this journal.' And she kept saying 'Really think about that.' [laughs] And then I sent it and the reviews came out. One was an accept [*sic*]. And one was a no. And [at] that point it was serious: let's rethink where we're sending it. And it was *so exciting to get that actual yes, even though there was a no, and an overall no* [emphasis added]. But it was pretty exciting, but it was quite funny at the same time. So it ended up going to another journal and it got accepted the first time around. *So that was very exciting as well* [emphasis added] (Zara, interview).

It appears that Zara's supervisor was well aware that the article was unlikely to be accepted by the journal Zara selected. However, this supervisor did not force Zara to change her selection: Zara's hearty laughter indicated that she did not in any way consider her supervisor's repeated advice to reconsider as an order. Zara's personal interest in and enthusiasm for writing consequently grew as the submission and peer-review process unfolded. Also, her positive reaction to peer-review is opposite to Genny's reaction discussed earlier (Section 5.2.3).

5.3.2 Strategies for Learning

Learners who appeared to be working within the phase of Competence use both shallow and deep learning strategies (Alexander, 2003, 2004). HDR graduates in this phase became aware of their learning needs and thus were able to direct some of their learning experiences. They sourced support from (1) within their student-supervisor

communities of practice, and (2) from beyond their student-supervisor community of practice.

1. Seeking assistance within a community of practice

Graduate interviews revealed that students sought specific support from their communities of practice. For example, Amanda requested help from an expert writer within one of her communities of practice.

> [I was] working out how to – not manipulate – but ... *how to tell the whole story in one paper. And again I realised I really couldn't,* [emphasis added] so it was trying to tack on to something that would contribute to the field. And I think the greatest support for that was talking to one of my supervisors who had a lot of experience in that field and edited a journal in the field, and I was telling him about the project and he was like 'Well *this* [emphasis added] is in an area of interest that still needs some more work, some more research, so why not focus on *that* [emphasis added] part of it, and tailor it to *that particular message* [emphasis added]?' And once I had that focus to work with I just had to massage it a bit to tell a particular message, to tell a particular story that I wanted to (Amanda, interview).

Amanda identified her difficulty with finding a focus and accessed the appropriate expert advice for her needs. Thus, Amanda's supervisor – the expert within her community of practice – was able to provide her with some brief, but vital assistance with her publication.

In addition to finding help within one community of practice, Amanda also developed her writing by providing assistance as a more expert writer within a different community of practice.

> When I did the 'Get Published' program[9], I was a peer buddy, with someone else doing their writing, looking at other people's writing and thinking about "Ok, how do we improve this for publication?" *made me think about my own writing*.[emphasis added] Like, because you are looking at it much more objectively, while I was helping them and not working on my own papers, at the same time I was thinking 'Oh, *I should do that in my own work as well*'[emphasis added] (Amanda, interview).

In this instance, Amanda worked as an expert within a community of practice. The process of sharing her expertise caused her to reflect on her own writing. This story also demonstrates that Amanda is perhaps transitioning to the phase of Proficiency. She is sustaining her own growth as a writer, and is sharing knowledge of the domain of writing for publication.

2. Seeking assistance beyond a community of practice

Competent HDR graduate writers also reported selectively accessing support beyond their immediate community of practice. For example, as a competent writer who had already published with her supervisor, Zara chose between two supervisor-facilitated writing groups.

> My supervisor who was more [schooling orientated], she was running a group as well.... So I would go in and out of that group because it wasn't always relevant to me because it was very [schooling] orientated. *So I stuck with one supervisor more than the other because I needed the real academic writing support rather than the [phase of schooling] side of things* [emphasis added] (Zara, interview).

[9] Amanda refers to an *event*. 'Get Published' is a program of workshops for HDR students writing a journal article. Students who complete the program have access to a writing group facilitated by a published student writer, known as a 'peer buddy.'

As a competent writer, Zara was able to ascertain that her need for academic writing support was greater than the content support offered by the additional group. Zara then choose the appropriate support to meet her learning needs.

As a competent writer, Emily also accessed support beyond her community of practice. Emily described a writing retreat she attended.

> I found that really helpful. I think that a certain amount of handholding *when you are learning these types of things* [emphasis added] is quite useful and reassuring. I think *I learned a lot about strategies as well,* [emphasis added] that other people use – tips and hints – so that is quite useful as well. Those things are good for that (Emily, interview).

Although she didn't describe her specific needs related to the retreat, Emily clearly articulated that assistance as the writing proceeded was useful. She also described what the learning experiences were, and what she learned. Unlike graduates in Acclimation, such as Genny, writers in the phase of Competence were able to independently assess and make effective use of support beyond their immediate communities of practice.

5.3.3 Knowledge

The knowledge base of competent learners is developing a structure but is not yet entirely linked in a cohesive whole (Alexander, 2003, 2004). HDR graduate reports indicate that in the phase of Competence, knowledge about writing for publication was a mix of thought complexes and concepts. Zara and Emily both articulated a personal concept of some publications being of a lower- level, yet useful for learning how to write for publication. Zara spoke about conference papers within the context of some comments on funding support for students.

> The problem now too is because conferences, which was often an easy way to get a few publications, or to start the process, *starting on that bottom level* [emphasis added] – because there's not a facility anymore for us to attend conferences, you know because of ERA[10], and because of finances and so forth, then that sort of *first step* [emphasis added] may not be there for as many people, you know, so that might even be more difficult for some people now, as HDR students (Zara, interview).

Zara provided the metaphors of a bottom level, or first step to publication. Emily spoke in a similar way of a conference paper, and a non reviewed article she wrote.

> I learnt a lot about rigour and stuff like that. Basically, I'm really embarrassed about those early publications ... because they were like my *training wheels* [emphasis added] (Emily, interview).

Although Emily now finds her first publications embarrassing, she understands that these 'training wheels' were a useful tool for the development of her writing skills. Emily and Zara understand that lower level publications can be used as a first step into publication in a new area. Competent learners are thus able to use their concepts to support further development and learning in the domain.

Typical of learners in the phase of Competence, graduate writers in this phase demonstrated complexes as well as concepts. Zara exhibited a persistent complex regarding time. Zara believed that to complete her current writing projects she needed large blocks of time.

[10] Zara refers to the Excellence in Research for Australia Assessment Exercise.

> I have honestly not had the time to dedicate to the finicky bits – you know where you make final decisions, you have to really be very clear what you're writing and play with the paper. *And you have to sit down and you have to have a few days to play with that* [emphasis added]. I haven't had the chance to do it (Zara, interview).

Zara did not consider alternate time management techniques that might suit her situation, but was stuck with wondering how to find the time she needs. It appears that although the developing structure of knowledge is able to be drawn upon by learners in the phase of Competence, their less developed areas of knowledge continue to undermine their efforts.

Although expert writers could not transfer fully formed concepts to their students, they did continue to provide starting points for concept development as they gave explicit instruction on writing. Zara provided one example when she describing writing for publication and writing the thesis.

> What I realised I think, is that *the PhD can be this lovely, fairly wordy account* [emphasis added] where you talk through it and of course writing for the journals is so much more concise. So you have to have different *head spaces* [emphasis added] to do it as well. And often my supervisor would say 'This is not your PhD, this is your journal [article],' to try and get me to think in line with a journal, with publication. So, whilst the material, the literature, the work was the same, the writing styles are very different (Zara, interview).

Zara's supervisor has clearly had some input into the development of her thought, which she acknowledged. Still, the phrase 'head spaces' and the description of a PhD thesis as a 'lovely, fairly wordy account,' seem uniquely Zara's. Expert writers

therefore played a vital role by stimulating the development of the HDR students' concepts.

5.3.4 Summary: Competence

Competent HDR graduate writers were developing a personal interest in writing, but still relied somewhat on a situational interest. Both forms of interest were supported by expert writers. The learning strategies of the competent Education HDR student writers were largely self-directed. These writers were able to assess their learning needs and choose the appropriate support. Expert writers within their communities of practice provided support when requested, but this support was not of the same intensity as that provided to the students in the phase of Acclimation. This result is consistent with Vygotsky's (1986) ZPD which predicts that learners will become increasingly independent and require less support over time as they develop their skills. The knowledge structures of competent HDR student writers were a mixture of complexes and concepts. The complexes appeared to hinder these writers from further development, but the concepts proved to be useful tools. The use of concepts as tools that can be consciously drawn upon by a learner is predicted by Vygotsky's (1986) theory of concept development. Expert writers supported conceptual development by continuing to offer explicit instruction as they wrote with Education HDR student writers.

5.4 PROFICIENCY

It appears that no graduate attained the phase of Proficiency. That is, no graduate demonstrated interest in writing that was purely deep and self sustained, learning strategies that were characterised solely by deep processing, or knowledge that was conceptual to the exclusion of any thought complexes (see Section 2.7.1). However, Amanda appears to be on the path to Proficiency. In addition to demonstrating some

personal interest in writing, her learning strategies were self-sustained and included a role as an expert writer in a community of practice and deliberate submission to peer-review for feedback. She is also starting to contribute to the academic field having published one conference paper and has more recently submitted an article on HDR writing to a peer-review journal.

A lack of new graduates in the phase of Proficiency is not unexpected. Such a learner is a generally able to be recognised as an expert in their field. In a research environment a senior academic is a likely example of a proficient learner (Alexander, 2004; Alexander, et al., 2004). New graduates typically have not achieved this status.

5.5 SUPERVISORS' PERSPECTIVES

Supervisors provided short vignettes on working with individual students. These brief accounts provided insufficient detail on individual students to ascertain their writing expertise. Therefore, supervisor comments on support relate only generally to the components of interest, strategies for learning, and knowledge. Supervisor, Dr Fiona addressed these components when she described how she co-authored an article with a Masters student. First, it appears that she encouraged his situational interest.

> It starts with: 'What do you [emphasis added] want to do, and where do you [emphasis added] want to send it? What's the goals [sic] for the paper?' So, once we'd established that this was going to be important for his PhD application and for his everyday work experience, we decided what we wanted to write about and where it was going to be sent (Dr Fiona, interview).

Dr Fiona fostered his situational interest in writing by asking the student key questions. In this case, the student's interest in writing an article stemmed from enhancing his future PhD application, and improving his professional situation.

Dr Fiona then reported guiding the student through the processes of writing.

> I encouraged him to seek out journals to begin with. So, right at the beginning *he knew where he was aiming for*, [emphasis added] rather than writing the paper and then finding a place to send it. *So we located a journal* [emphasis added] that would be useful and looked at what was required and *he wrote to that* [emphasis added] (Dr Fiona, interview).

Dr Fiona and the student identified a suitable journal together before the article was written. By doing this, she demonstrated the journal selection process, and how to use a journal to provide focus and structure for the writing.

Dr Fiona and her co-supervisor also modelled the processes of writing each section of an article, and provided explicit instruction in the genre of journal articles.

> So the whole time it's a work in progress with all of us, but it's a scaffolding process too, so you're modelling what's expected in the paper the whole way. So, without going into detail, for every section of the paper we were saying, *'Well a journal usually expects this, this and this in the introduction and then usually expects this in the methods section...'* [emphasis added] (Dr Fiona, interview).

Dr Fiona wrote some sections of the paper with the student, explaining the elements of genre as they encountered them together.

Dr James also fostered interest and strategies for learning. He promoted situational interest for one HDR student writer who was having considerable difficulties with English.

> I basically had to guide a lot of the writing in his publication, I just drew from his thesis to be able to say 'look, this is the work we are working on anyhow and writing' and putting it together in a form and said to him, 'now I want you to work from this.' So he really needed very structured guidance, otherwise he just wasn't going to get a publication out of it other than his thesis (Dr James, interview).

In this instance, Dr James appears to have interested the student in writing for publication by inviting or directing him to do so. This is consistent with HDR student reports. For a student confident in her English language abilities, Dr James used a different approach.

> I basically highlighted to her about publishing from her thesis as she continues going through her writing to complete her thesis and so *the idea then is to be able to then have editors out there, reviewers out there who have already analysed her work and are providing feedback from various sources which helps her to tighten up her chapters or parts of chapters,* [emphasis added] or whatever it happens to be within the thesis.

Dr James interested this PhD student in writing by telling her about the benefit of peer-review feedback to her thesis. By doing this he is setting her up to strategically use the peer-review process for benefit in the same way that the PhD graduate, Amanda proposed earlier (Section 3.3.6).

Promotion of situational interest and development of learning strategies and knowledge appear to have occurred at the same time. Supervisors fostered situational interest in writing for publication and supported learning strategies by providing close guidance for novice writers and also directed novice writers to support beyond the student-supervisor community of practice. Thus, supervisor accounts were consistent with graduate accounts.

5.6 CHAPTER SUMMARY

Analysis of graduate and supervisor interviews indicates that graduates' interest, learning strategies and knowledge were supported by communities of practice as they learnt to write for publication. Experts in communities of practice frequently initiated an external, or situational interest in writing for publication by inviting or directing students to write for publication, and by providing support for the writing, often in the form of co-authorship. At other times expert writers encouraged students' situational interest by supporting the students to write. In addition, graduates who had developed some expertise revealed that their personal interest in writing for publication grew as they were exposed to increasing challenges such as leadership of a team of writers, and making decisions, including journal selection. Learning strategies also benefitted from initial provision of intense support for novice writers with shallow learning strategies through to support that was more learner-directed as the students became able to assess and strategically seek to meet their learning needs. Student knowledge also benefitted from participation in communities of practice. Students who belonged to the one community in which they produced a single piece for publication demonstrated complexes regarding writing for publication. However, students who belonged to multiple communities of practice or had the opportunity to write several pieces within the one community demonstrated concepts.

Chapter 6: Conclusion

6.1 INTRODUCTION

This chapter presents the conclusions of a study of Education HDR graduates who wrote for publication during their candidature. The Chapter has four further parts. The first part pertains to training accessed by the HDR graduates as they wrote for publication (Research Questions 1, 2 and 3) (Section 6.2). It also addresses to the development of their writing expertise (Research Questions 1 and 4) (Section 6.3). The second part identifies the limitations of the study and issues that arose from the research design and methods and during implementation (Section 6.4). The third part considers the implications of the research (Section 6.5). The final part of the chapter identifies avenues for further research arising from the study (Section 6.6) and provides a chapter summary (Section 6.7).

6.2 EDUCATION HDR STUDENTS AND TRAINING IN WRITING FOR PUBLICATION

This Section addresses the training opportunities available to and accessed by the Education HDR graduates as they wrote for publication during the candidature of their HDR degrees. It presents a discussion on the communities of practice that provided opportunities for the graduates to start building a publication track record while facilitating the development of their expertise in the domain of writing for publication. It also argues that Education HDR graduates developed publications within communities of practice and therefore expertise and publications were developed simultaneously.

Research Questions 2, 3, and 1 were specifically addressed.

Research Question 1	Why are some Education HDR students able to write for publication during their candidature?
Research Question 2	What training opportunities were available to Education HDR students writing for publication?
Research Question 3	Which training opportunities did Education HDR students access as they wrote for publication?

The investigation of training opportunities available to Education Higher Degree students writing for publication revealed that six categories of support for writing for publication were available to the Education HDR graduates. These categories were *financial assistance*, *broadcasts*, *workshops*, *events*, *writing groups*, and *supervisor support* (see Section 4.3). Financial assistance was of some benefit to graduates including those who were enabled to attend conferences. However as financial assistance on its own did not develop writing skills, it was not considered a training opportunity. Of the remaining five categories, two were found to share the characteristics of a community of practice. These training opportunities were *writing groups* facilitated by expert writers and *supervisor support* (see Table 4.1). In addition to the categories of training opportunities available to all graduates, one graduate was invited to participate in two independent communities of practice. These were a partnership with a book editor, and a research team.

The investigation of training opportunities accessed by Education HDR graduates writing for publication and the development of writing expertise revealed no evidence of a graduate accessing or benefitting from broadcasts. Although some graduates did access workshops, events, and writing groups, it appears that without supervisor support, graduates who were novice writers did not necessarily benefit from these opportunities (see Section 5.2.4). Of the six categories of support, it was found that supervisor support, was universally accessed by the graduates.

The current study highlighted the importance of supervisors who facilitated communities of practice interested in HDR graduate publications. All six of the Education HDR graduates who had submitted work for publication prior to completion of their degree told of support from supervisors that could be described as a community of practice. In addition, two graduates had participated in supervisor-facilitated writing groups. These writing groups were also communities of practice, albeit different to the immediate student-supervisor community. It also revealed that the support of an individual supervisor, working one-on-one with an individual student was not necessarily the most effective source of support for HDR student writers. The most effective support described was a combination of one-on-one work with a supervisor with added support from additional communities of practice. The different types of communities of practice, the combinations of communities that were discovered, and their apparent impact on HDR graduate publication track and writing expertise are described below.

A s*ingle community facilitated by an individual supervisor* formed the first type of community of practice (see Figure 6.1). In these communities, one supervisor worked in a central role with one HDR student undertaking a more peripheral role. Students in such communities learnt some skills as they wrote and were guided or directed through the processes of writing and submission. This is the community of practice described by HDR graduates, Edie, Mark, and Genny. These graduates were able to use support afforded by the community of practice to submit a journal article, or, in Genny's case, to publish a number of conference papers. Despite learning about writing for publication, these graduates remained relatively novice writers, and they appear to be working within the phase of Acclimation. Their interest in writing for publication was dependent on external situations, and as learners they remained

dependent on expert assistance. Also, their knowledge about writing for publication resembled a *complex* (Vygotsky, 1986). Their knowledge was *concrete*, being grounded in the personal experiences of the graduates, it was also linked in *functional* rather than logical terms, and was *disparate* in content and in level of generalisation (Sections 2.7.1 and 5.2.3)

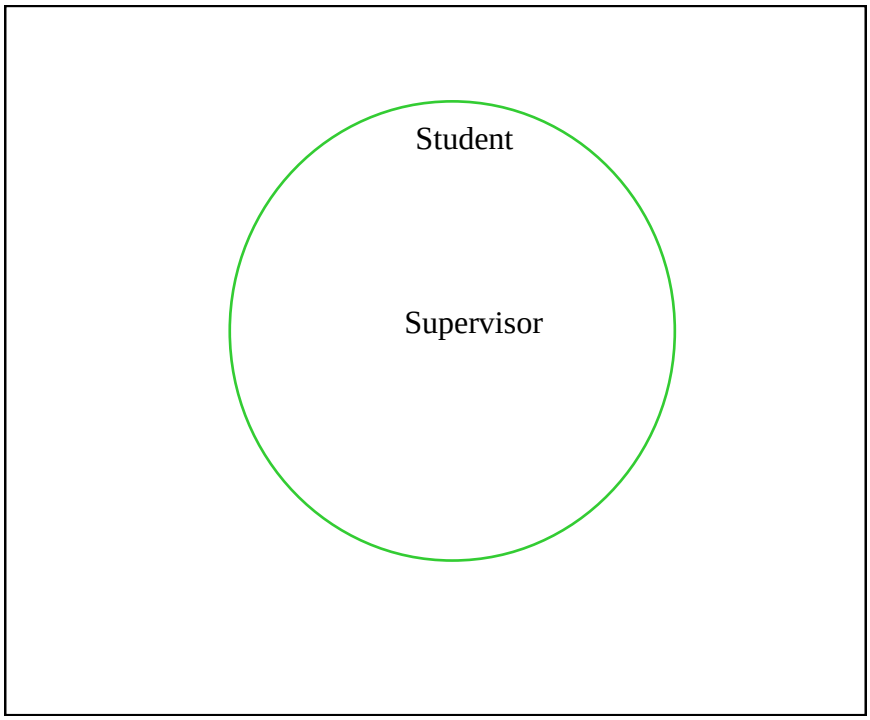

Figure 6.1. Single community of practice facilitated by an individual supervisor.

Multiple communities facilitated by a single supervisor formed the second type of community of practice (see Figure 6.2). Here, an individual supervisor worked one-on-one with HDR students in micro communities, and also facilitated an additional community of practice involving all of her students. In this additional community, HDR student writers initially played peripheral roles, but as their expertise developed they were able to undertake more central roles. These HDR graduates eventually required less assistance with writing and benefitted from experiencing writing and leadership challenges within a supportive environment. HDR graduates, Zara and Amanda successfully published a number of conference

papers and journal articles while working within such communities. These graduates also demonstrated characteristics of competent writers. These characteristics included a mixture of personal and situational interest in writing for publication, the ability to assess and meet some of their learning needs, and knowledge about writing for publication that includes some *concepts* (Vygotsky, 1986). Thus, some of their descriptions of writing for publication included *abstractions* whereby individual aspects of multiple ideas were used to form generalisations. Links between ideas were also *logical* (see Sections 2.7.1 and 5.3.3). It appears that students who were able to access multiple communities of practice received greater benefit than students who had access to only the one community of practice. These first and second communities are supervisor-centric. That is, the student writers were dependent on their supervisors to facilitate their learning experiences.

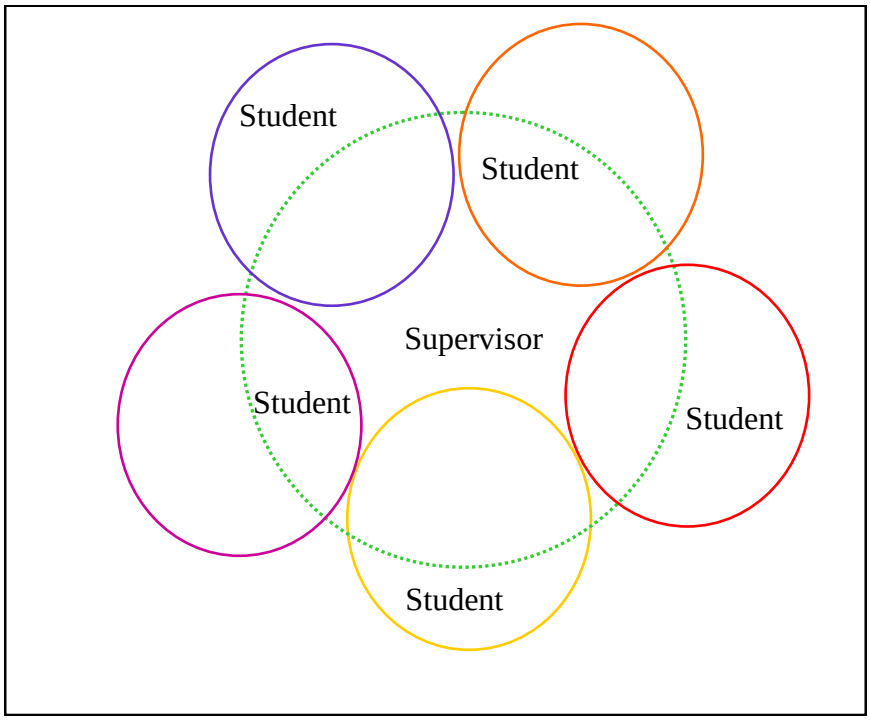

Figure 6.2. Multiple communities of practice facilitated by a single supervisor.

A *single student accessing multiple, independent communities* formed the third arrangement of communities of practice (see Figure 6.3). The student has the support of her supervisor, and the support of one or more additional communities of practice that are independent of her HDR research project. HDR graduate, Emily benefitted from such an arrangement, publishing a book chapter with a book editor in one community, a number of articles with a research group as a second community, and further articles with her supervisory team. She reported benefitting from both peripheral and central roles in the writing and publication processes. Like Zara and Amanda, Emily demonstrated characteristics of a competent writer including demonstrating personal and situational interest in writing for publication, the ability to assess and meet some of her learning needs, and some *concepts.* Implications of the various types of communities of practice will be discussed shortly (see Section 6.5.2).

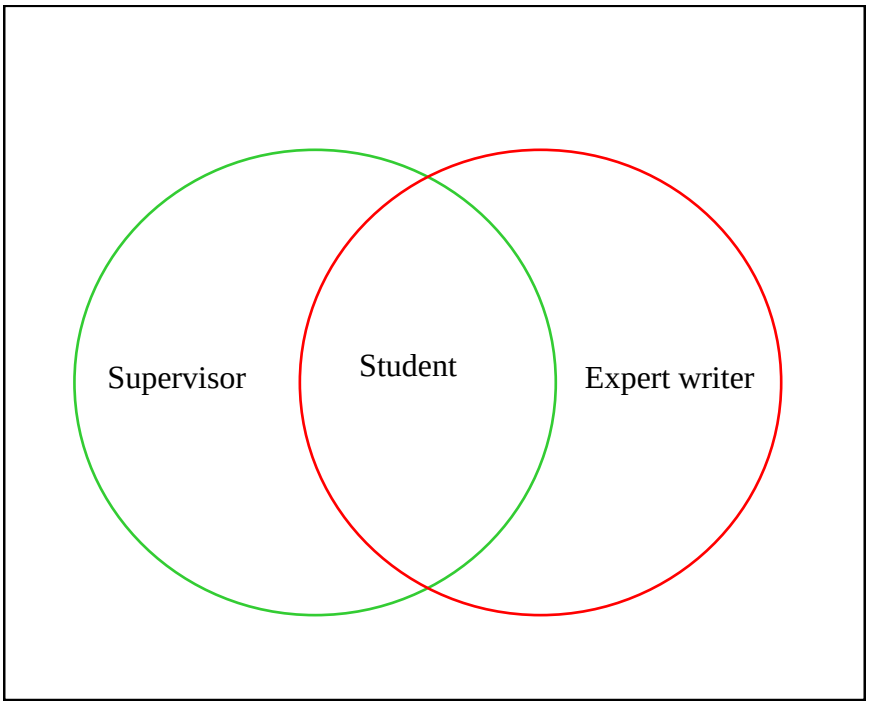

Figure 6.3. Single student accessing multiple, independent communities of practice

6.3 DEVELOPMENT OF HDR STUDENT WRITING EXPERTISE

Student expertise in writing for publication within a specific learning environment was explored in this Section. Research Questions 1 and 4 are addressed.

Research Question 1	Why are some Education HDR students able to write for publication during their candidature?
Research Question 4	How did Education HDR students develop expertise in the domain of writing for publication?

The results indicated that HDR student writing expertise develops when each of the three components of the model of Domain Learning are supported, namely interest, strategies for learning, and knowledge. Because expertise was developed by writing within communities of practice, publications and expertise are developed simultaneously. Interest in writing for publication (Section 6.3.1), strategies for learning about writing for publication (Section 6.3.2), and knowledge about writing for publication (Section 6.3.3) were all supported by communities of practice.

Further, graduate reports indicated that as some of the students moved through the phases of Alexander's (2003, 2004) MDL, from Acclimation to Competence, communities of practice were responsive to their changing needs.

6.3.1 Support for Interest in Writing for Publication

Experts within communities of practice initially elicited and supported the situational interest of HDR student writers. The graduates frequently reported that they had not considered publishing their research until invited or directed to write by experts within a community of practice. Graduate publication stories also revealed that expert writers encouraged situational interest by assisting them with the writing process. These findings agree with those of Dinham and Scott's (2001) global surveys of PhD graduates which regarded the support of supervisors to be necessary to publication. Without explicit direction, or invitation to write for publication, HDR students may be unaware that publication is possible, or desirable. The importance of supporting for situational interest was highlighted by stories of graduates in Acclimation who no longer experience this support.

Graduates who appeared to be in the phase of Acclimation and whose interest in writing for publication was not supported after thesis completion, either showed no further interest in writing, or listed circumstances that appeared to be limiting their interest in writing for publication. For instance, Genny had ongoing writing projects, but her interest in publication was strongly tied to her career aspirations. She stated that because her chances of getting a desirable job are decreasing, she felt discouraged and consequently she was struggling to get the writing and other tasks done, and was considering quitting altogether. This result is consistent with Nolan and Rocco's (2009) findings. Their students were supported to write and submit an article for publication during a writing course. Presumably, the course requirements

and the encouragement of the course facilitators provided some support for the situational interest of the students. However, students who received instructions to revise and resubmit after the course was completed, and their interest was no longer supported did not continue with the publication process. These students consequently failed to publish their articles. Like Nolan and Rocco's (2009) students, graduates in Acclimation in this study who are no longer supported by a community of practice seem unlikely to continue further with their writing for publication.

6.3.2 Support for Learning about Writing for Publication

Graduate reports also demonstrated that their initially shallow strategies for learning were supported by intense and explicit instruction. Explicit instruction is frequently reported to be integral for the development of writing for publication (Boud & Lee, 2005; Cuthbert, et al., 2009; Kamler, 2008; Lee & Boud, 2003; Mullen, 2001; Nolan & Rocco, 2009; Paré, 2010). Graduates interviewed for this study found such support useful, yet also indicated that support for explicit skills was gradually withdrawn. This gradual withdrawal enabled the students to develop their writing skills to include independent writing, or leading a writing team within a supportive environment. In some cases, it also served to foster a personal interest in publication because the students experienced some satisfaction in being able to make decisions and lead a writing team. Although such withdrawal is consistent with Vygotsky's (1986) Zone of Proximal Development, gradual withdrawal of support is rarely broached in the literature on support for the academic writing of HDR students, perhaps because so much of this literature evaluates a single program, with a set time limit (Morss & Murray, 2001; Mullen, 2001); or provides a broad but brief survey of the field (Dinham & Scott, 2001; McGrail, et al., 2006). One exception is provided by Nolan and Rocco (2009) who concluded that an extension of the support provided

to students enrolled in their writing course to include support for attending to reviewer comments would probably result in a higher number of published works. Extended but reduced support has implications for the development of student writing, and possibly for the sustainability of support programs. This will be discussed later (see Section 6.5.2).

6.3.3 Support for Knowledge of Writing for Publication

Graduate reports suggest that student knowledge of writing for publication grows following exposure to experts within communities of practice. However, fully formed concepts as described by Vygotsky (1986) were not provided by graduates who experienced the one, short-term community of practice. Such concepts were only occasionally demonstrated by graduates who wrote within longer lasting, or an increased number of communities of practice. Consistent with Vygotskian (1986) theory, it seems that concept development requires a shared engagement between expert and developing writers over a sustained period of time.

Conceptual development emerged as an important issue because graduates who demonstrated well developed concepts, or an association of ideas characterised by logical links within an abstracted framework (Vygotsky, 1986) frequently drew upon these to support their writing and their learning. This finding is also consistent with Vygotsky (1986) who observed that concepts are able to be consciously and deliberately examined and used by the learner. For example, Amanda was able to draw upon a concept of peer-review as a community of helpful others, and plans to submit an article to a high quality journal. If her article is not accepted, Amanda will use the feedback to improve her work and submit elsewhere. In contrast, students dependent on *complexes*, or an association of ideas characterised by concrete, disparate links and lacking an overarching, abstracted framework (Vygotsky, 1986)

were hindered by these. Genny's disparate description of peer-review includes a notion of personal attack. Genny does not strategically seek feedback via the peer-review process, and when she does receive reviewer comments she experiences hurt and frustration. The apparent importance of concept development makes it a potential area of interest for future research (see Section 6.6).

An overview of the training accessed by Education HDR graduates from communities of practice as they wrote for publication and developed expertise in the domain of writing for publication is shown in Figure 6.4.

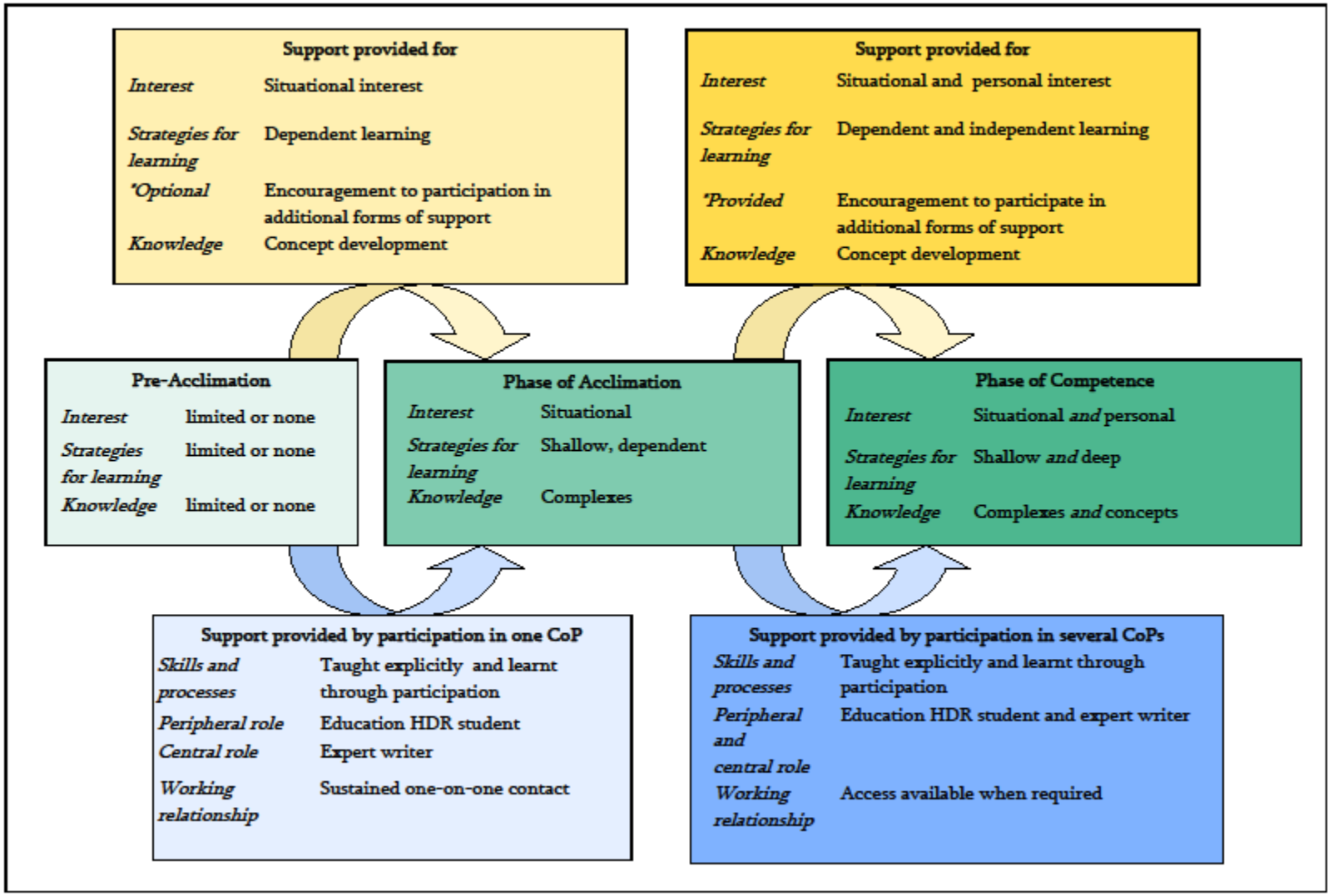

Figure 6.4. Training opportunities and development of writing expertise

6.3.4 Roles of Supervisors

Supervisors who worked with students in a community of practice appeared to be very important to the production of Education HDR graduate publications, and to the development of Education HDR graduates' writing expertise. The centrality of supervisors to HDR publication has been noted previously by Kamler (2008), who found that the Education PhD students only published in peer-reviewed outlets if supported by supervisors. Similarly, Dinham and Scott's (2001) survey's of Doctoral holders led them to propose that supervisor support is critical for PhD student publications across disciplines. Although there have been some attempts to move the conversation on HDR student learning beyond the support of individual supervisors (Boud & Lee, 2005) this study indicates that supervisors are often the expert writers who support HDR student writers as they learn to write for publication. For example, all students wrote within student-supervisor communities of practice, and PhD students, Amanda and Zara participated in supervisor-facilitated writing groups.

Supervisors also supported students to access and benefit from other appropriate training opportunities. Previous studies have reported that not all students participate in learning experiences provided in the research environment (Boud & Lee, 2005). This study found that invitations from expert writers were essential to HDR student involvement in such learning opportunities. For example, Amanda benefitted from a writing retreat she attended while writing her first paper. However, Amanda was also receiving some assistance from her supervisor to develop the article. Supervisor perspectives confirmed the role of supervisors in supporting students in Acclimation to access further support. Dr Fiona encouraged her student, Edie to attend academic writing classes provided by the Faculty research office, and reported that his writing improved as a result. The importance of supervisor interest

in the engagement of HDR students in training opportunities available within the research environment is also demonstrated by stories where this support seemed to be lacking. For example, Genny attended a writing retreat and a variety of short writing courses, yet appeared unable to elaborate on any learning that may have occurred.

Supervisor support emerged as an enabling factor for HDR student publication. The MDL (Alexander, 2003, 2004) predicts that learners do not typically contribute to new knowledge while they are relatively new to a field (see Section 2.7.1). It appears that during the first two phases of the MDL, Acclimation, and Competence, the interest, learning strategies and knowledge of HDR student writers do not support such a contribution as a peer-reviewed publication. Interest in writing was largely dependent on external circumstances, including prompts by more expert writers, predominantly supervisors. Learning strategies were shallow, the HDR graduate stories revealing that when they were students and new to publication they relied heavily on the instruction and guidance of more expert writers. Knowledge was fragmented and with few exceptions HDR student writers new to writing for publication appeared unable to use their knowledge to strategically further their writing. Despite exhibiting characteristics of learners in the phase of Acclimation and Competence, these writers were able to successfully complete work suitable for submission for peer-review, and in most cases publish these contributions to knowledge. These publications were developed with the assistance of more expert writers, usually the HDR supervisors. Therefore, this study revealed that learners in the early phases of expertise development are capable of making a contribution to knowledge when provided with sufficient support.

Although all graduates acknowledged the important role of supervisors in the learning process, this study revealed two factors that limited or magnified supervisor impact on both HDR graduate publication track records and the development of HDR graduate writing expertise. These factors were (1) the length of time that a student was supported by a supervisor within a community of practice, and (2) student access to additional communities of practice.

Length of time that students were supported within a community of practice appears to be important. Graduates did not indicate exactly when, or for how long their writing for publication was supported. However, it became clear that although graduates supported to write only one publication within a community of practice did successfully submit that publication, they remained in the phase of Acclimation. That is, they typically retained the dependent learning styles of novice writers. However, graduates who were supported to write multiple publications within that same community of practice developed a stronger track record. These graduates also demonstrated characteristics of competent writers, including the ability to assess their knowledge gaps and seek appropriate support. Extended participation in the one community of practice also allowed the graduates to experience increased responsibility for writing within supportive working relationships. For example, following an experience being the last author on a paper, Emily enjoyed a period where she led a team of writers knowing that she could easily access the skills of the greater team, should she run into difficulty. Provision of assistance over a sustained length of time is noted in the literature on support for academic writing (Aitchison, 2010; Caffarella & Barnett, 2000; Nolan & Rocco, 2009; Paré, 2010). However, although the opportunity to experience increased responsibility, or a central role in the writing process with appropriate support is predicted by Wenger and Lave (1991;

1998), and Vygotsky (1986), it has not yet emerged as a significant feature of the literature on HDR students writing for publication.

The *Number of communities of practice* also impacted the effectiveness of supervisor support. Graduates who accessed multiple communities of practice demonstrated characteristics of competent writers, whereas graduates who accessed only the student-supervisor community of practice appeared to remain relatively novice writers (see also Section 6.2).

6.4 LIMITATIONS OF THE STUDY

This study has Education HDR students writing for publication has five limitations. First, a limited picture of the role of communities of practice in the development of publication expertise may have been presented because this study investigated only graduates who had succeeded in completing work suitable for submission for peer-review. It has been noted elsewhere that communities of practice may not be entirely democratic, and that issues of power, and marginalisation may work against the skill development of some learners (Lea, 2005; Tusting, 2005). It is therefore possible that communities of practice interested in writing for publication do not equally benefit all HDR student participants. For example, some student writers could become confined to peripheral roles and never have the opportunity to gain expertise while undertaking a central role. Having English as a second language may reduce these opportunities, certainly Edie and Mark, both speakers of languages other than English only wrote within peripheral roles.

Second, a lack of coverage of student-supervisor teams was another factor that contributed to a possibly limited portrait of communities of practice. Apart from supervisor, Dr Fiona, and her graduate, Edie, this study did not attract any student-supervisor teams, possibly due to the mobility of both academic staff and HDR

graduates. For example, many potential graduate participants have found employment and moved from the immediate area. Had student-supervisor teams been able to be accessed, a more complete picture of communities of practice may have been presented. Instead of indirect confirmation or additions to student stories, more direct supervisor responses might have been provided had both the HDR student and the supervisor's perspectives on a particular graduate's participation in writing projects, their writing and their expertise been obtained.

Third, the lack of generalisations across cases may also have limited the representation of communities of practice accessed by Education HDR students. Although it was initially proposed that units of analysis based on case diversity such as gender, or English language expertise might be developed, the composition of the cases did not lend itself to such division. This is because all of the graduate participants with English as a second language were also male. Similarly, division by degree type was not feasible given that the only Masters student was also male and had English as a second language, and at least one of the PhD students spoke about her experiences as a Masters student and as a PhD student. Overall, in this study, it was not possible to separate the different elements of diversity and to ascertain any impact of this diversity.

Fourth, precise support timelines were not collected from the graduates. Broad chronologies were provided by graduate publication records and graduate descriptions of first and later publication experiences. However, specific indicators of time, including the frequency and duration of meetings between graduate and supervisor, and the length of time over which different support was provided were not collected. Therefore, although time emerged as an important factor in the development of expertise, precise indications of how long it took and the precise

intensity of support required for a particular graduate to develop competence are lacking.

Fifth, the impact of HDR supervisors on HDR graduate writing may have been exaggerated because no Education HDR graduate who wrote without the assistance of their supervisor volunteered for the study. It was suggested earlier (see Section 6.3.4) that supervisors are critical to the success of HDR students who write for publication. However, a check of the university's electronic repository reveals at least one recent graduate with multiple sole-authored publications. It is therefore possible that graduates who wrote without the support of a supervisor simply did not respond to the invitation to participate in this study. It is also possible that such students are proficient writers.

6.5 IMPLICATIONS

A number of implications arose from this study. These implications related to theory (Section 6.5.1), and to research training (Section 6.5.2).

6.5.1 Implications for Theory

From a theoretical perspective, this study suggests implications for both the Model of Domain Learning (MDL) and for communities of practice. First, the MDL suggests that learners move through three phases: Acclimation, Competence and Proficiency, as they develop expertise within a domain. It is in the phase of Proficiency that a learner will start to contribute to new knowledge in the form of published work (Alexander, 2003, 2004) (see Section 2.7.1). The findings of this study suggest that communities of practice can assist learners in the phases of Acclimation and Competence to negotiate the gaps in their interest, learning strategies, and knowledge to produce work for publication, and develop expertise within the domain of writing for publication. However, graduate success in publication indicates that although the

students were in the phases of Acclimation or Competence, they were able to achieve publication with the assistance of more expert others. Thus, this study could inform further studies on how learners can be assisted to develop expertise and progress through the three phases of the MDL (Alexander, 2003, 2004).

Similarly, the use of the MDL as a framework to understand how successful learners were assisted to write for publication and develop characteristics of competent learners revealed a relatively unproblematic journey from peripheral to full participation in communities of practice. Relatively intense support was required across the components of interest, learning strategies and knowledge by Education HDR students in the phase of Acclimation to achieve publication. As predicted by Vygotsky's (1986) ZPD, longer-lived communities of practice were gradually able to withdraw this support as the HDR student writers gained expertise and became more able to write independently. Hence, it is possible that effective communities of practice enabled learners to develop expertise while completing authentic work are sensitive and responsive to the changing needs of these learners across the components of interest, learning strategies and knowledge. Less effective communities may not be sensitive or responsive to these needs. Thus, this study could inform further studies on the relationships between expert and novice writers within various communities of practice.

6.5.2 Implications for Research Training

There are three implications for research training. First, this study reinforced the direct and critical role played by supervisors of HDR students in writing for publication. Therefore it is important that supervisors have the capability and are willing to support their students to write for publication. Recruitment and training of supervisors would ideally be mindful of the needs of HDR student writers. For

example, supervisor recruitment and accreditation policies could require that supervisors be active publishers; and supervisor training could include multiple ways of providing support to HDR student writers including co-authoring and facilitation of writing groups. Supervisors also appear to play an important role in facilitating the engagement of HDR students with other opportunities for publishing or learning about publication available in the research training environment. HDR graduates reports indicated that they did not participate in these additional training opportunities without supervisor support, or that they did not benefit from the support without the support of a supervisor. Therefore, research training opportunities available to students should be actively promoted to HDR supervisors and the potential benefits highlighted.

The second implication for research training regards enhancement of the current training environment with the provision of alternative communities of practice to the student-supervisor community. These communities may serve the interests of Education HDR students whose supervisors do not co-author with students, or otherwise actively support writing for publication. The findings of this study revealed that students can successfully publish in alternative communities of practice. Effective communities of practice that supported a HDR student's writing included a research team and collaboration with a book editor. However, as noted above, alternative communities of practice are most likely to succeed if the supervisor is also in some way engaged with their student's writing for publication. Therefore, supervisor support for HDR students writing for publication in general, and potential support for students who engage in alternative communities of practice would need to be gauged prior to implementation. Such communities are likely to be highly beneficial to HDR students already writing with their supervisors. These

supplementary communities would provide additional time to foster these students' interest, learning strategies and knowledge about writing for publication, and help them progress to Competence. Therefore, alternative, but genuine communities of practice such as writing groups and writing courses encompassing the production, submission, and resubmission of works for peer review could be considered for sponsorship by a Faculty or university.

The third implication for research support regards the sustainability of support provision. Graduates reported that they benefitted from an initial period of intense support for their writing. Presumably, provision of this support could be highly demanding of the resources of an individual supervisor. However, as students entered the phase of Competence, they appeared to receive additional benefit from a reduction of support. During the period of reduced support, interest in writing for publication became less reliant on external circumstances, and concepts were developed. This phase thus potentially provides a greater return on supervisor investment of time than the phase of Acclimation. Sponsorship by Faculty or university of alternative communities of practice for HDR students in the phase of Acclimation could benefit supervisors who support their students' writing by reducing the initial burden of intense support for writing.

Also of interest to sustainability of support for HDR students writing for publication, graduates who had already developed some writing expertise reported that their own writing benefitted following participation as tutors in a Faculty-sponsored scheme targeting writing for publication. These findings support Faculty sponsorship of communities of practice for student writing for publication as a sustainable and productive use of resources. Although such communities would require resources from the Faculty or university, it appears that drawing on HDR

student expertise would potentially benefit both the community and the more competent HDR student writers.

6.6 AVENUES FOR FURTHER RESEARCH

Four research issues warranting further support arose from this study. First, a further study that is able to examine specific practices which assist or impede Education HDR student success within communities of practice would provide a more complete portrait of these groups. For example, an observational study of a community of practice in action would provide further, rich data on the group structure, practices and dynamics. Recorded observation and socio-linguistic analysis of communities of practice has been proposed elsewhere (Tusting, 2005). In addition, particular attention to sensitivity and response to individual learner needs in the components of interest, learning strategies and knowledge may reveal why some learners are enabled to transition from peripheral to full participation, and from novice to competent learner in such a community while others are not.

Second, the development of specific concepts appeared to assist the Education HDR graduates to become increasingly self-sufficient. For example, the concept of peer-review enabled some graduates to seek out novel ways to support their own learning, such as strategically using the journal peer-review process to seek quality feedback on a paper. Research reporting concept development in higher education settings include studies on the development of specific concepts, including: how students use talk and come to understand the concept of 'force' (Rincke, 2011), how students come to understand mathematical signs (Berger, 2004); how the concept of voice in French language is developed by second language-learners (Brooks, Swain, Lapkin, & Knouzi, 2010); and how the concept of marking 'tense' in English language assessment is developed (Ganem-Gutierrez & Harun, 2011). A study of

how Education HDR students come to understand specific concepts, such as peer-review would add to this existing knowledge and would be of interest to the sustainable provision of support for HDR students writing for publication.

Third, a comparative study of supervisors within the field of Education who do or do not co-author with their HDR students could ascertain the impact of this practice on HDR student writing. One such study compared supervisors in the sciences to supervisors in Education and was able to claim that supervisory practices do impact HDR student writing for publication (Kamler, 2008). However, comparison across the two disciplines introduced factors that may have impacted on the results. These factors included the discursive expectations regarding student publication, and the typical HDR student populations within the two fields. Therefore, a similar study performed within the field of Education could be informative.

Finally, research could be conducted to establish critical events in developing expertise as a writer. This would involve students recording significant events as they occurred rather than relying on memory.

6.7 CHAPTER SUMMARY

This study found that Education HDR graduates who, as students wrote, submitted and sometimes published in peer-reviewed outlets were supported to write by one or more communities of practice. Communities of practice provided a strategic amount of support, thus enabling the student writers to accomplish the task of writing for publication, a task that they are unlikely to have been able to accomplish alone. Supervisor support also proved critical to the success of the Education HDR students writing for publication. This support was provided by supervisors who acted as expert writers within a community of practice. Despite the importance of supervisor

support, the provision of additional support in the form of alternative communities of practice appears to provide a greater return for supervisor resources than a single supervisor working one-on-one with a HDR student. Such communities of practice include those facilitated for multiple students by their shared supervisor, and those facilitated by expert writers independent of the HDR student's research project.

The limitations of the study included a perhaps one-dimensional view of communities of practice being shaped by the characteristics of the graduates who agreed to participate. These graduates had all successfully submitted works and therefore may have only had positive and productive experiences. Accounts from graduates with negative experiences, or from those who wrote without supervisor support were not collected.

Implications for theory and practice were proposed. Implications for theory include the use of community of practice to support the development of learner interest, learning strategies and knowledge. Implications for practice include the suggestion that communities of practice be established by Faculty or university for Education HDR student writers. Such communities would support the publication track and writing expertise of Education HDR graduates and reduce the workload of supervisors who support their students to publish. Communities suitable for students in the phase of Acclimation, when their need for support is most intense would be particularly beneficial.

Avenues for further research were proposed. These include a study that reveals the community of practice in-action, potentially providing a richer picture of the practices that work to support or inhibit student learning would be beneficial. Investigation of the development of specific concepts by Education HDR graduates

would also contribute to the field and to the development of sustainable support for student learning.

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Appendices

Appendix A: Graduate Interview Protocol

Interview protocol: HDR students

1. **Pre-interview**
   - I am gathering data to identify the challenges that HDR students have faced when writing for publication and the support they found effective. This interview is not an assessment of your personal publication activity.
   - Request permission to turn on audio recorder.
2. **Research Questions** (semi-structured: these are initiating questions to be used as a guide only)

   Challenges

   - What are your beliefs about writing for publication as a research student?
   - Can we go to the first paper/article that you submitted? Can you tell me about the experience of writing that piece?
   - Were there any particular difficulties that you faced with the writing of the piece?
   - Have you started a paper or article and nor completed it? Can you tell me about that?

   If more than 1 paper submitted
   - EITHER: Can we go to the first *peer-reviewed* item that you submitted?
   - OR: Can we go to the next paper that you submitted?
   - What was different about the experience of writing that paper?

   Support

   - What support did you draw on as you wrote for publication during your candidacy?
   - Can you tell me about any experiences of writing as part of a team?
   - Is there anything else you would like to say about the experience of writing for publication as an HDR student?

3. **Post-Interview**
   - Do you have a preferred pseudonym (first name) to be used in any publications arising from this study?
   - Would you like to view a copy of the transcript of this interview and an opportunity to make corrections?
   - Reminder: this study is about the challenges HDR students face when writing for publication and the support they find helpful. It is not about publication productivity.

Appendix B: Graduate Interview: Zara

Note: Zara and I started chatting as I entered the door. She was talking about the difficulties of publishing as an Early Career Researcher. I asked if I could start the tape straight away. She accepted.

I: So it's hard now that you've – can I just continue with what we started?

Z: Yes, yes.

I: Ok, So it's hard, now that you've graduated, to finish all the papers that you've got in preparation?

Z: Yeah well what I did is I had a plan for my PhD of the papers that I could possibly publish from my PhD and I made that plan with my two supervisors, and we were looking at chunks of my PhD and what could transpose to papers and I just found, like I finished last year in November and it's November this year and I've had huge teaching commitments. I had three units in first Semester and, no - I had four in first Semester and I had three in this Semester – Semester Two. So, I've got three and a half papers all probably sitting between 70 and 90 percent complete but I have honestly not had the time to dedicate to the finicky bits – you know where you make final decisions, you have to really be very clear what you're writing and play with the paper. And you have to sit down and you have to have a few days to play with that. I haven't had the chance to do it.

I: That's very interesting.

Z: I did do some papers with my PhD while I was actually studying my PhD. But what happened too was I got offered the position – a full time position – while I was still studying for my PhD. So I went part time – from full time to part time. And then

that stopped my writing. So I think I published quite a few times through my Masters and my PhD but once I started full time work that just slowed down completely.

I: Ok, that's very interesting, Ok. So getting on to, back to those ones that you've already submitted, can you remember a first, or a very early one, an article, or a book chapter or something? What kind of paper was that?

Z: Well the first one I ever did was a conference paper. And I thought I'd done really well and I had my conference paper ready and I went to meet my supervisor, to show it to her and she said "What draft number is this?"

And I went "What do you mean?"

And she said, "Well what draft are we up to?"

I said "A?"

And she said "Start thinking about p,q..." [*Z laughs*]

And I went "What?" And that was my first experience of realising the rewriting, the rewriting, the playing with, the extending, the getting the ideas down first and building, I had no idea, I was like a lamb to the slaughter I think, you know that first experience, I had absolutely no idea of what I was doing. So that was my first experience with a conference paper. My first experience with a journal paper was really interesting. I did that again with my supervisor first up and I used that journal paper to clarify my literature review from my PhD. And it was a review of the literature to date, you know a five year span, and what I did, I used someone else's methodology that I'd seen, a very neat methodology for reviewing peer-reviewed literature. And of course that first went out, when I first sent it out I sent it out to [named journal] which would perhaps be the top journal in the world and my supervisor suggested that I start somewhere a little bit lower and I said "No, no, I think this would match this journal. And she kept saying "Really think about that."

[*Z & I laugh*] And then I sent it and the reviews came out. One was an accept. And one was a no. And that point it was serious: Let's rethink where we're sending it. And it was so exciting to get that actual yes, even though there was a no, and an overall no. But it was pretty exciting, but it was quite funny at the same time. So it ended up going to another journal and it got accepted the first time around. So that was very exciting as well.

I: Mm, And were those, it sounds like those were both sole publications and your supervisors helped you on the side. Is that the case?

Z: I put my, with my PhD I did with my supervisor. I would say I did the writing with both of my supervisors, or one. I would have to say that whilst I may have been writing it was a joint effort because there was a lot of mentoring happening at the same time. So in that respect I think that it's both, even now with the papers I'm doing from my PhD it will be joint, you know with my PhD supervisors because they had a lot to do with the material that I'm writing about. So I don't think I still could have done those first two papers without the support of my supervisors.

I: So what prompted you to write for publication then? What beliefs do you have about writing for publication?

Z: Can I say I thought it was a requirement of doing your Masters and your PhD. I think it was part and parcel of that experience. I hate writing to be quite honest. I really struggle with writing. And everybody says "So does everybody else." But I am one of those people who can keep talking and I often have to and my supervisors (they are not my supervisors now) even say to me "Talk out loud," because I am more natural at doing those things. So I love teaching and things like that. So for me writing is very difficult, so I have to really work at it. So that's why it's harder I think. I can easily teach so I tend to go that way. But, I think when I first started

writing it was because my supervisors encouraged me to. And they said it really could be part of the PhD, or the Masters. And with the literature review, that paper there supported the literature review. So, it was very meaningful at the same time – so it had a reason – to link to the PhD.

I: Yeah. So did writing the two at the same time, did that impact on each other?

Z: Timing wise, I think yes, and because I was working full time at that point, or I was getting the job at that time, I was doing the interviews and so forth. So, yes it did timing wise. But, what I realised I think, is that the PhD can be this lovely, fairly wordy account where you talk through it and of course writing for the journals is so much more concise. So you have to have different head spaces to do it as well. And often my supervisor would say "This is not your PhD, this is your journal," to try and get me to think in line with a journal, with publication. So, whilst the material, the literature, the work was the same, the writing styles are very different.

I: Ok, so, with those first articles, the conference paper and the article that you were speaking about, were there any particular things that you got stuck on, or particular difficulties that you remember?

Z: With writing. The academic writing, um, I think yes and no, As I said I found it all very difficult but I did have some great mentoring at the time. With the Masters paper, that was my first conference paper, I did work on that very closely with my supervisor. And what she did then was she, I think she almost took me through the process of writing a conference paper, where we looked at other conference papers, we looked at material from that actual association, what they've done before. So we did a lot of work on that type of thing. We did a lot of the structure, you know, what is the abstract? You know looking at the actual structure of the conference paper. So I needed a lot of help just on those basics, so that was very good.

When I was doing the journal, the same sort of thing happened with my supervisor. But what I was really lucky with was at the same time I was in a writing group. So my supervisor had organised for all her students to meet. Like we tried to meet once a month and we looked at technicalities of writing. We looked at structuring paragraphs. We looked at topic sentences, POP (point of paragraph) sentences. We looked at a book, that academic writing book[11] *[Z refers to XXX academic writing – Andrew Johnson?]*. We reviewed that, and we started to review other people's work. So we looked at all those sorts of things. And I think that helped as well – doing that type of thing. So even though I still think I suck at writing big time, I have had a lot of support to get this far. I think now I know the technicalities of writing a decent paper, I just seem to go on a bit when I'm writing, I need to keep to the point. That sounds right doesn't it?

I: Yes it does. So you had the support of your supervisor – the mentoring relationship, and you had the support of your group. Was that group facilitated by the supervisor as well?

Z: Yes it was. Now my other supervisor – that was through one supervisor – my other supervisor had a different, had another group but I was more aligned with one supervisor than the other. My PhD and my writing was in [an academic discipline] and [a phase of schooling] so one of my supervisors was very [discipline] orientated, and the other was very [phase] orientated. So I stuck with the [discipline] side of things, and my supervisor who was more [phase orientated], she was running a group as well. I didn't go to all of her sessions, I came in and out. She asked me to come to the group to talk about my data analysis, and how I was looking at that in terms of my PhD and my writing. So I would go in and out of that group because it wasn't

[11] Zara refers to Johnson, A. (2003). *A short guide to academic writing*. Lanham, MD: University Press of America

always relevant to me because it was very [phase] orientated. So I stuck with one supervisor more than the other because I needed the real academic writing support rather than the [type of schooling] philosophical side of things.

I: So you took what you needed from what was available.

Z: So I had two options, I had lots of support.

I: Yeah. And was there other support available that you used as well?

Z: Well [the research centre] was building their, all of their information and their services and their sessions and so forth. So I did go to a lot of sessions that [the research centre] held and [named Professor's] discussions and that sort of thing. I went to a series of his discussions over the time. So yeah, I did go to anything that I thought could help. And then there were different sessions at that point in time on: How to write an abstract – I think I said that one – and how to target a journal and things like that. So I went to all those sort of things – when I could. Some of the things I would have liked to have gone to, once I was working, I couldn't go to anymore – timewise. But, I'd try to go to different sessions that [the research centre] had on.

I: So that's two sorts of support there...

Z: so there's my supervisor's support and their groups, [the research centre]'s support, I also went to the retreats, you know, our lovely writing retreats, that was great because you had access to different people then. So, sometimes you could ask somebody else to look at your work who really had nothing to do with you, which was really good. And [named A/Prof – retreat mentor] whilst he has never been my supervisor he has just been a lovely support. He's always been happy to look at my material as well. So I've had – I should have done a lot more, considering the support [laughs] that I've had.

I: Ok, I think we've just about covered everything there. Thanks you so much that was such really rich information – just one more question – is there anything else you want to say about the experience of writing for publication as an HDR student?

Z: As and HDR student, I think it's essential that we do do it. Because I think it sets up the academic side of our lives in terms of that's the reality of what we are doing. I think it's very important. I do think, as I said, I was very lucky I had mentoring and I still found it very difficult. So I am saying that you should do it, but the reality of doing it is also very difficult. The problem now too is because conferences, which was often an easy way to get a few publications, or to start the process, starting on that bottom level – because there's not a facility anymore for us to attend conferences, you know because of ERA, and because of finances and so forth, then that sort of first step may not be there for as many people, you know, so that might even be more difficult for some people now, as HDR students. I do think that we need to be publishing from the beginning, not that I'm saying it's easy. And I do think the mentoring is the key to it, from the supervisor, or from a group, or something like that, because on your own it's really difficult.

I: Ok, Thank you for that. That was excellent, actually, can I just ask one more question that came out of what you said? Were you supported at some time to go to a conference?

Z: Yeah, well I really wanted to go to a conference, I did grants-in-aid so, I went to Prague, I think, to the [named conference] and I did get grants-in-aid. Once the paper was accepted you could apply for grants-in-aid, and I did do that. So now, I'm not particularly interested in going to conferences because I want to up my journal work and acceptance rate with journals. So right now I'm not interested in conferences because I don't have the time with working and everything. But, as a beginner in the

HDR world, going to those conferences was such a highlight because you actually met other people. You met people in the field. You met colleagues. People who you'd been reading about, you'd read their articles, and it was amazing to go and speak to them. And they were all so generous with their time. You'd go to a session and stand back and ask a question at the end of the session. I think that was a huge benefit as a young student because it immersed you into that world as well. Actually, I'm not trying to sound like a groupie, but meeting the people that you were reading about was also really exciting because you could put things into context and it was amazing sitting at lunch and having those professional conversations about their articles, or their publications and as I said, I was surprised at how generous they all were. I thought early on that I was just a student, that they wouldn't take the time, but everybody who I approached took the time to speak to me about my work or their work. So those conferences in the early days I used to come back on a huge buzz and feel extremely motivated to try and write more because of being involved and immersed in that community. So, I really think for HDR students, if they can at least attend one conference specific to their discipline it would be really beneficial and I think that would be a support to them as well. Because you get the conference proceedings and you start madly reading and the more you read articles the more you think about writing, and you've got to read to write and you've got to write to read. And can I say one thing? I was told by my supervisor that the only good writing was rewriting. And that was one think I've learnt – that you've got to keep writing. And also to love structure because once you decide a structure you can keep to it or alter the structure. So that's the academic writing advice that I've been given: rewrite and structure. I wonder where I got that from *[both laugh]*.

END

Appendix C: Supervisor Interview: Dr James

I: Why do you support your research students as they write for publication?

J: Well thanks ever so much first of all for putting the questions out beforehand too, because it gave me time to think about the questions and maybe come up with better examples for you as well. And because I've rethought about the questions I think I've changed my view on a few different things to condense and maybe solidify the ideas. And so in which case here we're supporting the students I put down basically I do it for a number of different reasons and one is I see it as my role, I see it as the responsibility for academics at the university, and it's also within the [university's] strategic plans. So that gives us some guidance towards what we should be doing at the university. But, apart from that I'm really looking towards advancing the knowledge that occurs within the world and so I very much appreciate the privileged position of being with other academics in their growing roles and trying to guide them. And also learning at the same time with them about whatever the new issues are so it's about being at the cutting edge of information, the cutting edge of knowledge transfer and knowledge growth. And so part of that I think is also trying to increase the publications that come out of this partnership and when it comes up to working with research students I see it very much as a partnership, as a collaborative arrangement where hopefully I have some experience that I can use to guide them along their way. That's not saying that my guidance is going to be perfect in any way and indeed I'm a learner as well with them on their journey and so it helps me to understand what they're on about, so I do a lot of reading as back up to be able to support them and also with the knowledge about, let's say data collection and methods and approaches that I can utilise that understanding towards how it might

help them in their projects. But, ultimately the final decision is up to them. So they're the adults, they're the ones who have a project in mind. I can provide a range of options that aim to support them, and indeed, maybe even arguing against a certain approach if I've already had experience down that pathway to say "this may not work for these reasons." So once I've provided the balance of options, then they can make a more informed decision as well as going to the research themselves to make that final decision for themselves. So basically I look at it very much as partnerships, collaborations, being corroborative with the research itself and also looking at, because a lot of our HDR student are international, I see this very much as an international collaboration too. So it puts links in with other countries and other universities and there can then be quite advantageous positions then for [the university] to be able to forge a new relationship with a country, or with a university and therefore it helps to promote that knowledge growth and knowledge transfer and help [the university] or the university at the same time. And finally I have here too the idea of just the personal satisfaction that I get in supporting students. So why do I support them? Ok I do get personal satisfaction in helping someone else along their pathway. I do receive PD – professional development - in that way because I am involved in their project and it also helps me, I guess when it comes up to promotional purposes that I can highlight where I have been collaborative and assisted others in that way. And that is still within the umbrella of the strategic plan for the university. So I also see that the support is very much with me as a mentor, in a role that aims to facilitate that support. So to be as positive as possible but still critical without putting them down, without pushing them off to one side in any way but to support them, hopefully with any ideas that they have, further formed and then provide them with direction that helps them move on their pathway.

I: Ok, thank you. The mentoring word I was waiting for that to come up.

J: It's what I'm on about for a lot of things. I'll give you examples of that later on.

I: Sure, then my second question is could you please describe a recent experience of supporting a student as they wrote for publication?

J: OK, well it's really hard to differentiate between the different students because they are so different. And so in which case I can't just select one, I'd like to select two.

I: Ok

J: This will show the differences that may occur. So for example, with recent experience with publication I have one, I had one HDR student, I'm talking about two people who have already completed their doctorates and so even though I'll give their real names here of course you'll use pseudonyms at a later time.

I: Yeah

J: For example, Mai Lin who was very much on the ball for getting into publications when she first came to [the university], I basically highlighted to her about publishing from her thesis as she continues going through her writing to complete her thesis and so the idea then is to be able to then have editors out there, reviewers out there who have already analysed her work and are providing feedback from various sources which helps her to tighten up her chapters or parts of chapters, or whatever it happens to be within the thesis. So a recent example of supporting a student with publication would be for example with Mai Lin, she has been on-track the whole way to continue with publications throughout her thesis and that's very comforting for me because it means there's self motivation for publications. And she's willing to, she was willing to dedicate a lot of time to ensuring that she gets further publications. So when it comes up to support I would definitely use various mentoring skills and

practices to assist her in that way, in the first instance it was more, "let's have a look at the potential topics that you can write on," and trying to then delineate the specific areas that might form particular journal articles or conference papers and with that I would write in with her so we would basically write together at different times to be able to strengthen what is for the publication. When it gets towards the end, usually there's no less than six versions, so [laugh] there's usually about 10 or 12 different versions, as we get closer to the end then we start using track changes through the reviewing tool system in Microsoft word and that helps to refine some of the ideas so we would bounce ideas off each other through meetings, face-to-face meetings in those initial times that help us to unpack some of the complicated ideas and then we would do a lot of work online because it's very convenient, in the time it takes to travel here we could already go through a couple of papers [laughs] sometimes, so in which case it's very convenient to be able to use the internet to be able to support her in this way. But she followed through very clearly the directions I provided when it came up to, let's say, how do you submit an article to a journal, looking at the specifications, the requirements of that journal, the level of complexities that occur within the journal and to ensure that it is in keeping with that quality and the standards that the journal expects. So providing those sorts of ideas in the first place, but also showing her how to go through the reviewing processes, expecting reviews to come back and that it is a very rare document that comes back without a comment and saying it's ready for publication. Now, on the other side there was Andrew [pseudonym], who was an international student. I've thought about two international students here because that makes a good comparison. I could talk about other national students but I think this shows what the differences can be, internationally. And Andrew had difficulty in his language. So English as a foreign language, or

EFL, he really needed to develop his English language skills. Mai Lin on the other hand, she was an EFL teacher in [Asian country], so she really had quite a good command of English language, particularly for writing purposes. Maybe not some of those colloquial understandings at first, but they developed as she went along. But she definitely had a good comprehension of how the English language worked, whereas Andrew was learning English at the same time as doing his thesis. And so, consequently supporting him towards publication was far more challenging because the support was more in the English language development before we can get to the conceptual understandings. Because if the language isn't clear then the concepts aren't clear and so we had to ensure, well I basically worked with him myself all the way through until Ian [associate supervisor] came through in his fourth year. So he was struggling that much with the language, trying to get him a publication was very difficult. Even though he knew that it was going to be valuable and he would state back to me that he saw putting the work in would strengthen his thesis, I think the struggle with the language was so much that he didn't have the time to be able to do anything further than what he was working on and consequently Andrew only had one publication from his thesis which was a conference paper, which is considered to be like a, I don't even like using the word second class citizen, but [laughs] it is a second level, maybe a third level, but it's not a high level, into one of the journals for example, or even into an A or A* journal. So, nevertheless when Andrew carried through with the publication, I basically had to guide a lot of the writing in his publication, I just drew from his thesis to be able to say "looks this is the work we are working on anyhow and writing" and putting it together in a form and said to him, "now I want you to work from this." So he really needed very structured

guidance, otherwise he just wasn't going to get a publication out of it other than his thesis.

[J turns to computer] And, however, and I'll get this up, I figured it's worthwhile seeing the evidence as well when it comes to these notions. So he ended up getting into the [named International Education] conference because it's about leadership and mathematics and in which case he was quite thrilled and you see the email, this just after getting it [J reads email] "Hello James, I got this email last Friday. They accepted our paper. YAY!! They also provided their review of the submitted paper." So that gives you an idea that he was excited about having that acceptance into [named International Education conference] but that was his one and only publication.

Whereas, and I've got the documentation that you can have and it gives you supporting evidence [J gives I his publication record. This included co-authored publications] And here let's say for Mai Lin, there were 1,2,3 journal articles that she wrote with me, and sometimes another colleague as well, and she did write with other colleagues too, it wasn't just with me, so we were trying to share the workload around, but also two conference papers, that shows that she was right on track. Andrew only had one conference paper during that time. Mai Lin published overall maybe about 8-10 articles from her thesis, which is strong. So now, there's the differences between those two as well, in supporting them but also seeing that the English language can become a real barrier, and indeed currently I'm working with other Doctoral students, and a couple of them are really struggling with the language. And so they are having to work through that at the same time. To then put the added pressure on to try and get journal publications when they are so heavy into their work and they are still struggling with their language development, I think might push

them over the edge. So we need keep a balance on how we deal with international students who have difficulties with the English language. So that gives a little bit of a run down.

I: Mm, thank you, excellent, you've covered the next question that I was going to ask about the difficulties that they've experienced, so that was the language.

J: Yes, and it's not only that, that's just between those two. So if I look at difficulties for others, so we have an HDR student who is doing his PhD and there's some real difficulties there coming up for publication as well and that is the pressure of completing the thesis on time, in a timely fashion. And this particular person, he has financial constraints, if he doesn't get it completed on time he will need to start paying back the money that has been assigned to him from his country, and that will create financial hardships for him, and his family. And he also has family commitments, including looking after others, and he is basically the person who looks after everyone in his family, he comes from a relatively poor family. So there are all sorts of pressures there. His main aim is just to finish his thesis and he's struggling with that because of the language. He's developing, but he's still struggling. So, he can't afford to spend even another second outside of his thesis, so they're real difficulties in trying to get towards other publications, other than his thesis. Hopefully when he finishes his thesis he might go into publications but that may not show a partnership in the authorship of any publications.

And then there's the professional doctorates which I think may struggle very much so - because of their workload in their profession. For example I had one who was leader of many different institutes and he was, he couldn't find enough time to dedicate towards even doing his thesis and so he had to withdraw eventually. He ended up having one publication, but that was earlier on, and he was thankful for

that, and that was because the conference was held here at the university site, and we were able to have lots of people coming in with publications at the university site because it didn't cost them much and they were able to get money in support of the conference registration and it didn't cost them anything in accommodation and travel which can be very costly for those who are struggling financially, not so much for this person, this is more a time factor, he wouldn't have been able to afford the time to go off somewhere else and spend three days presenting, or in the travel/presenting time, so that's a factor.

Another one, and this is not just HDR students, I don't see this just as HDR, I see that there's a whole range of people who fit into this category that are not necessarily HDR, and they include, for example, it might be those who are on research pathways, not necessarily from Master's or a Doctorate.

I: That's the undergraduate program.

J: That's right, in the undergraduate program. But it could also be existing academics who have not any publications and they too need that support and guidance for publications. So I'm talking about, for example, currently I'm working with a string of people at the Caboolture Campus, and we're writing in all sorts of different areas. Their constraint, the biggest constraint there is that they do not have other support for academic writing on that campus. And consequently the support comes from someone else who can provide that. Because I am there teaching one unit and they call upon me to help them with their publications and their writing.

I: So that's more of a lucky accident than something that's planned?

J: Well it was planned because back in 2006 I wanted to have a meeting with everyone on campus to be able to see how we could move forward in publications, but it wasn't seen as being, by others there, as being a direction at that time.

Nevertheless, now they are all on board. And these people are not just in education. These people who I am writing with and supporting are in Nursing and in Business. And basically looking at how they can get their publications together. So there are constraints and one of the biggest constraints - which happens here at this university – is that with an outlying campus like that, they require that support on site. You see, to travel in to GP or KG can cause a lot of difficulty for those who are already in place for their teaching, they have to be in place for all sorts of reasons, they need to be able to have access to someone up there. I'm saying is that even though I'm there at the moment, I might not always be there. There needs to be that support throughout. So there's another constraint. Ok, I'll leave the rest of that one go. Next one?

I: Ok, so would you say your experience of writing with students, as far as you know, talking to other supervisors, is that fairly typical, that other supervisors are out there doing the mentoring?

J: Oh, I don't know.

I: You don't know.

J: All I can say is that from the people with whom I've worked and as a co supervisor, which has been fantastic, I can see a range of differences, and in those differences it provides further insight on how I could be for my mentoring. The differences are, and can include, for example, one supervisor will have very dedicated quality time in discussing and make almost rigid meeting times so that they are set and these are the milestones, the guidelines that are needed to be met for future meetings. To, at the other extreme, where the supervision is more: "Well I've given you some advice so you go away and I'll see what you've come up with when you've done that." And that might occur two months later. And then there's

everything in between. I'm probably more of the view myself not to be on either of those extremes. I think more about the guidance and the mentoring but still allowing that autonomy and flexibility, and I think that's valuable to have, and I think that if it's on either side, it can be too constraining in one way or another, constraining for those that have rigid meetings where "Ok I'm not ready yet, I still haven't, you know I had this, this and this..." and puts this added pressure on where the HDR student may not have been ready. And on the other side where the HDR student might be thinking, "Oh yeah well everything's alright, I haven't been contacted," and they don't realise that they are the ones with the autonomy. So they have to be reeled in, in some way to be able to make it more timely. So, I can't tell about others, other than what I have experienced myself in that way. But, generally, the ones who I have mentored with are very, very good, they are right on board. They have great conceptual understandings, great understandings about methodology, methods, and they really have insights into how the thesis can be put together. And it's quite a creative endeavour, quite an innovative approach of trying to work out "how do we solve this problem of trying to put the thesis together?"

I: Mm, Ok, so we'll go into support although we didn't really clearly divide it. The next question was about co-authoring experiences. Do you feel you covered that sufficiently, or did you have anything to add?

J: No, I think I covered that sufficiently, in fact, this I'll leave with you [J refers to his publication list] It shows a number of co-authoring experiences. I never put myself first with HDR students, it's always their work, they need to be first authors, and even though sometimes I feel that I've done more work than what they have in a couple of occasions, it's still important that they're the ones who are putting themselves forward because it's their primary work. So that gives an understanding

there. And as I say it's not only the students here. I have one student who applied to come to [the university] but she was knocked back. Anyhow, because I said I would support her and supervise her, anyhow she was taken up by [another university] succeeded tremendously, received her doctorate, but in the meantime, she and I were publishing all the way along and we did all this collaborative work while she was an HDR student. So it was a great collaboration, and we are still collaborating now, we are writing book chapters and other things with regard to that. I think she has a lot of the content about EFL in Vietnam, for example, whereas I have a lot of content about mentoring and – and the English language – which she needed as well. Ok?

I: Yes, have you ever worked through reviewer comments with a student? Is that a process you do?

J: Yes, definitely. That's something I promote as well. Indeed for CLI – Centre for Learning Innovation - I have provided some seminars with regard to how to review, in fact when I first came here, well a couple of years after I came here [named senior staff member] asked me to present on how I addressed reviews because I was getting publications so reviews were coming in - how did I go about that process? So I would take others through that process. But also with every publication that you see on this list [J refers to his publication list], reviews came through and indeed there were some where the publication was knocked back so we reworked according to what the review was and we submitted it elsewhere. Nevertheless I showed how you go about addressing reviews. And now I'm more towards where we just use track changes and so we just use track changes as one document to show how we've addressed the review and have a clean page and we submit both to the publisher and they then see where we've made the changes and this, the clean document. And that helps tremendously, in the past we went through all these other complicated ways

because track changes wasn't there and we had to go through line-by-line and address it there and then show where it was in the paper, but now it's much easier to be able to do that. So I find that really helps.

I: Using new technology as it develops – also the online writing as you were saying earlier as well.

J: New technology, much easier, much easier. And we can get reviews done very, very quickly now – addressing the reviews – very quickly. So instead of previously where we were trying to struggle with what we need to do here, but with track changes it really does help.

I: Yeah, excellent, good. So do you know about any other support that your students might have accessed when they were writing for publication in particular?

J: Mm, ok, other supports include bouncing ideas off their own peers, like for example – and I would encourage this too – let's say from some of the publications that you see on that list [J refers to his publication list] where the HDR student then sought the view of a colleague and they then worked with that notion to be able to advance their paper. Also CLI, obviously there's a lot of, there's quite substantial seminars that are provided: publication week and with the confirmations and oral finals, and all those sorts of forums allow for others to view how their own research might eventuate. And there are other forms around the university too. For example I had one Doctoral student, he's quite outstanding, he's international but he has a great grasp of the English language, he also has a significant scholarship to be here, including an Australian scholarship, so quite strong that he's here. And he writes brilliantly – he's almost got that flawless style. And so I'd like to see what his writing will be like in a few years time. So he needed to know about a few programs. So, for example, even though I've worked on programs such as SPSS and AMOS

and I have an understanding of qualitative type methods as well. Nevertheless, he wanted to use NVIVO. Now I had used NVIVO before. I'm not a huge fan but it depends on I guess the information that's coming in, the volume of it and how it's going to be analysed. So this particular HDR student wanted to be able to use that and there was a course offered at GP with NVIVO, and so he went through, checked it out, understands the program. I don't know that he's going to use it yet, he's still in the process of data collecting, he may end up going to a different method for qualitative data. So there's opportunities right around the university to be able to have that PD. But also, when the HDR students attend conferences they learn significantly from talking with others, and from also observing and being part of the conference presentations, particularly those who are HDR students themselves. It gives them an understanding of where they might fit within this huge educational global system.

I: So it's quite a wide range.

J: Yes.

I: So, finally, is there anything else you'd like to say, from your perspective, about the experiences of HDR students as they write for publication?

J: Their experiences, well, instead of saying that, this probably goes back a couple of steps and I can leave you with a couple of things that also aid in guiding HDR students [J has number of documents] also there's documentation on writing an abstract. So they need to have an understanding of how to write an abstract in the first place because generally a lot of the papers require an abstract. So they need to get clear guidance in how an abstract is formed. Not that this is hard and fixed but it at least gives a direction. And of course if they read abstracts and they are guided to other works, then they can get a much broader idea of how to put one together. [J

presents abstract development worksheet] Also when it comes up to, from my perspective, trying to get HDR students to publish from their thesis so that they are considering all the way through about publishing from their thesis, here [J presents presentation notes about publishing from thesis] in this presentation – and this is a presentation I provided for CLI – but also I go through with my own HDR students how to structure the paper, how to address the reviewer's comments and ideas in that way, and also, as I was saying, capitalising on conferences. So, in the first instance, a lot of them may not be ready for a journal article, so a conference paper, refereed – I always insist on refereed papers – in which case the very first undertaking can be a conference and it would help them to gauge what they are up to. They also receive some feedback and they won't be as awestricken or fearful of presenting when they are actually at the conferences and they see how they are run. I think a lot of them think they're the ones who are going to up there standing in front of a thousand people.

I: Like a key note.

J: Yes, they are not key note speakers. But they are there to present works and they're presented to other people who are very much interested in those works. And finally, this is something, and this goes to what I do to support the HDR students. I was invited down to Monash University by [named senior staff figure] and she saw my five factor mentoring model as something that would apply for mentoring for research productivity. And so, she asked if I could speak at this forum, and there were about 40 people there in the forum, mainly either the supervisors – the professors, associate professors, the doctors who supervise for HDR students, and the HDR students. So they were all there in this one forum. And I presented this understanding and undertaking of a mentoring for enhancing research productivity [J

presents notes on mentoring presentation]. So, in here, you'll be able to see some of the information that I use myself when I guide my HDR students within the five factors. I'll just say what they are because I think that's important to say. And that is the supervisor's personal attributes, and in this case a supervisor needs to show that supportiveness, and needs to be able to demonstrate attentive listening as well as that communication. So it becomes a two-way dialogue. The process is not just a one way path. And also instilling confidence and positive attitudes in that HDR student. So, the second factor is with the system requirements, and here we're talking about the aims and the policies and the curriculum for research. That is, this will link directly to [the university's] standards, to [the university's] strategic plan, and what is expected through timely completion. So that is part of the system requirements. Then the big part is with the knowledge – the supervisor's knowledge, the pedagogical knowledge. What do I need to do to help the HDR student reach these goals? Reach these milestones? And part of that, you'll be able to see here, there's aspects including planning, timetabling, preparation, strategies for research – what strategies you can use, the content knowledge, problem solving – and there's a lot of that, that occurs all the way through. Sometimes the HDR student might think that the supervisor has all the answers, it's not the case at all. Indeed, it's a problem solving task that they're both involved in. Also, the management of the project, how it's being managed. Questioning skills – what sort of questions can we put to the HDR student that will help them to think about their projects? And also, there's assessment which has to do with the oral – with confirmations – things like that, and various viewpoints. Modelling, this part, I think, is crucial to allowing the HDR student to think about how to put forward their own publications. And modelling about the enthusiasm about wanting to get a publication. Why? Having a rationale about why

you would want to have a publication in the first place. What does that do for you? For your career? For pegging out your territory with the knowledge that you are gaining from your research? So there's the language of the research – using these key terms which they come up with quite easily – like qualitative, quantitative – using that language and understanding that language, and how it can be used purposefully within the writing for the publications. Then research and well designed research. Raport with participants in research, demonstrating how you would have that raport in some way – you know, that you are not there: "Give me all the data now!" in a dictatorial, authoritarian way, but instead, it's, " thank you for helping me go through on this research and I appreciate the information you have been giving me to be able to move with whatever the research theme is, or your topic is. And also, finally, feedback of course as the fifth factor. And that is as a supervisor and a mentor in this way I would give clear expectations from the first step and say, "these are the expectations for completing your doctorate or thesis, I would review the plan, I would observe the forums, for example if it's a confirmation forum, or an oral forum, I'll try to be there where possible – sometimes our time is very tight and it doesn't always work – but the oral feedback, the written feedback, also, an evaluation of their reflection, to find how they work in that way. So this [J refers to mentoring notes] provides a bit of a guideline on what I use, what I see as my philosophical standpoint, my philosophical underlying principles for mentoring and supervising HDR students.

I: Ok, thank you very much. That's excellent.

J: And finally I guess a successful publication from an HDR student is a success for [the university].

Appendix D: Sample Question and Response: Supervisor Telephone Interview

I: Thank you for that. Could you please describe a recent experience of supporting a student as they wrote for publication?

F: Ok, well it's the same experience with this international student.

I: Ok.

F: He did a Masters by Research. Really very timely – He'd done it within the 12 months, he was on a scholarship, and this is a student who wants to do his PhD by publication. So we've just submitted his publication to an – the old ERA ranked – A journal, and the actual process of supporting him was kind of multi-pronged. There were two supervisors working with him, and so it really – I'm on the right track here right?

I: Yes, absolutely.

F: I guess it starts with: What do you want to do, and where do you want to send it? What's the goals for the paper? So, once we'd established that this was going to be important for his PhD application and for his everyday work experience, we decided what we wanted to write about and where it was going to be sent. So I encouraged him to seek out journals to begin with. So, right at the beginning he knew where he was aiming for, rather than writing the paper and then finding a place to send it. So we located a journal that would be useful and looked at what was required and he wrote to that. So, once it was established he went back into his thesis and I said to him, "Ok, well what is it that you want to focus on? Check out the research questions for the paper and go to your thesis and take out the bits that you think will apply to this particular paper."

All the time we were saying to him, “It’s not a cut and paste, you can’t just extract pieces from your thesis and glue it together.” I’ve learnt that the hard way. So, he went through and looked at the general idea from his research question that he was trying to portray in his paper, and really from there, once he had pulled together the bones of his paper, as a team we just batted this document back and forward between us. So it really became very much a team effort after that. With both his other supervisor and I fine tuning - in some places actually writing bits because we were co-authors at that stage - in other places writing comments for the student to address himself. So the whole time it’s a work in progress with all of us, but it’s a scaffolding process too, so you’re modelling what’s expected in the paper the whole way. So, without going into detail, for every section of the paper we were saying, “Well a journal usually expects this, this and this in the introduction and then usually expects this in the methods section and blah, blah, blah. So it’s kind of a student-led process to begin with and then very much a team-based smoothing over as we went through the paper after that. It’s still under review, so we don’t know how successful we’ve been yet.

Appendix E: HDR Graduate Interview Excerpt: Edie

Question 1: What are your beliefs about writing for publication as a research student? Note: I have deliberately left this question a little vague to avoid leading you in any direction. Please just write the first thing – or things that occur to you.

Response to Question 1

As a research student with [the university], I firmly believe in writing about the findings of my research project. This is because my project has found new knowledge about improving the quality of practice in the field. For example, the currently practice of elementary teacher training in [my country] does not encourage elementary teachers who are not sociocultural conscious about teaching and learning. Given [my country's] cultural diversity, the elementary curriculum in the schools does not even demonstrate cultural appreciation by encouraging cultural teaching pedagogies. This is because the reform curriculum has emphasis on teaching cultural content based on the cultural activities of the individual communities. My project has led to suggesting alternate ways of approaching teaching and learning in [my country]. Therefore, sharing this knowledge with others about the findings of my project is important for the professional community.

Appendix F: Graduate Recruitment Flyer

Queensland University of Technology
Brisbane Australia

PARTICIPATE IN RESEARCH
Information for Prospective Participants

The following research activity has been reviewed via QUT arrangements for the conduct of research involving human participation.
If you choose to participate, you will be provided with more detailed participant information, including who you can contact if you have any concerns.

Becoming Proficient Writers: HDR Students in Education Writing for Publication

Research Team Contacts

Principal Researcher: Rowena McGregor, Research Student, QUT

Associate Researcher: Professor Carmel Diezmann, Faculty of Education, QUT

What is the purpose of the research?

The purpose of this research is to identify the challenges faced by HDR students in the field of Education as they write for publication, and the support strategies that these students find effective.

Are you looking for people like me?

The research team is looking for recently completed HDR students who have written and submitted to a peer reviewed outlet either during candidacy, or within a year of completing their degree. It is not necessary for the work to have been published. The following items are of interest:

- peer reviewed research monograph
- peer reviewed book chapter
- peer reviewed conference paper
- peer reviewed journal article

If you are not sure whether your work falls within these categories please contact Rowena: ra.mcgregor@student.qut.edu.au

What will you ask me to do?

Your participation will involve both (a) attending a face-to-face or telephone interview, approximately 1 hour in duration, and responding to questions related to writing for publication, and (b) supplying a list of submitted publications and information on any progress towards publication. Interview questions may include:

- Tell me about the experience of writing the first item you submitted for publication

Are there any risks for me in taking part?

The research team has identified the following possible risk in relation to participating in this study:

- There is some risk that your responses may be disclosed to the Assistant Dean (Research) of the Faculty.

To manage this risk, all interview data will be de-identified before being shared with the AD(R).

It should be noted that if you do agree to participate, you can withdraw from participation at any time during the project without comment or penalty.

Are there any benefits for me in taking part?

It is expected that this project will not benefit you directly. However, it may benefit future HDR supervisors and university support staff by better informing them about the needs of HDR students who write for publication.

Will I be compensated for my time?

We would very much appreciate your participation in this research, however, you will not be compensated for your time.

I am interested – what should I do next?

If you have any questions or would like to participate in this study, please contact the research team for details of the next step. Please email Rowena McGregor: ra.mcgregor@student.qut.edu.au

You will be provided with further information to ensure that your decision and consent to participate is fully informed.

Thank You!

QUT Ethics Approval Number: 1100001431

Appendix G: Glossary

Concept	An association of ideas about a topic characterised by concrete, functional links. Links are disparate in content and level of generalisation (Vygotsky, 1986)
Complex	An association of ideas about a topic characterised by abstracted, logic links. They are consistent in content and level of generalisation. Complexes are able to be deliberately and consciously examined and used by a learner to (Vygotsky, 1986)
Peer-review	A process that involves an assessment or review of the research publication in its entirety before publication by independent, qualified experts. Independent in this context means independent of the author. Source: 2011 HERDC Specifications for the collection of 2011 data available: http://www.innovation.gov.au/Research/ResearchBlockGrants/Pages/HigherEducationResearchDataCollection.aspx
Higher Research Degree	PhD, Masters Degree by Research, Professional Doctorate
Scholarly works	Peer-reviewed journal articles, conference papers, chapters and monographs.
Research publications	Books, book chapters, journal articles and/or conference publications which comply with the definition of research and are thus characterised by: substantial scholarly activity, as evidenced by discussion of the relevant literature; an awareness of the history and antecedents of work described, and provided in a format which allows a reader to trace sources of the work, including through citations and footnotes; originality (i.e. not a compilation of existing works); veracity/validity through a peer-review process or commercial publisher process; increasing the stock of knowledge; and being in a form that enables the dissemination of knowledge. Source: 2011 HERDC Specifications for the collection of 2011 data available: http://www.innovation.gov.au/Research/ResearchBlockGrants/Pages/HigherEducationResearchDataCollection.aspx